T.C
YEDİTEPE UNIVERSITY
GRADUATE INSTITUTE OF SOCIAL SCIENCES

THE IMPACT OF NEW TECHNOLOGIES ON SCHOLARLY COMMUNICATION:

A CASE STUDY ABOUT EDUCATION TECHNOLOGIES AND MEDIA

by

Şebnem Gürsoy ULUSOY

Submitted to the Graduate Institute of Social Sciences

In partial fulfillment of the requirements for the degree of

Doctorate of

Media Studies

EYLÜL, 2016

Approval of the Institute of Social Sciences

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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Abstract

21st century brought a period of change that has started with technology. Change and transformation designated the start of a new period. The Internet and the concepts of new media and social media that emerged based on the Internet have made the masses running lots of their routine and current states through these media. As a result of this change and transformation reflecting on the field of education, the use of technology has increased both in academic studies and scholarly communication processes. The use of technology has emerged in academic processes along with education programs to which technology was adapted, technology-based universities and higher education institutions. Scholarly communication processes have changed with the increase of technology products used by academicians, and they are described as education technology. Database searches and searches on online sources have taken the place of researches on printed publications in libraries. The reading processes have started to occur on computers and tablets. Communication processes have changed by exchanging emails, instant messaging and personal social online accounts. Academic studies are now possible to be done online. Within the scope of the study, how academia underwent change with new media and education

technologies and what kind of changes this process created in the processes of the scholars in Turkey communicating with each other and doing joint studies were examined and researched.

Key Words: Digitalization Education Technology, Ed-Tech, Scholarly communication, Scholarly effect, Scientific collaboration,Future of academia, academic transaction, digital innovation in academia, Education technology

Özet

21. Yüzyıl teknoloji ile beraber başlayan bir değişim sürecini de beraberinde getirdi. Değişim ve dönüşüm yeni bir dönemin başlangıcı oldu. İnternet ve buna bağlı olarak ortaya çıkan yeni medya ve sosyal medya kavramları ile birlikte kitleler birçok rutin ve güncel durumlarını bu mecralar üzerinden yürütür hale geldiler. Bu değişim ve dönüşümün eğitim alanına yansıması ile birlikte akademik çalışmalarda ve akademik iletişim süreçlerinde de teknoloji kullanımı arttı. Teknolojinin adapte edildiği öğretim programları, teknoloji tabanlı üniversiteler ve yükseköğrenim kurumları ile birlikte akademik süreçlerde teknoloji kullanımı ortaya çıktı. Eğitim teknolojisi olarak nitelendirilen akademisyenlerin kullandığı teknolojik ürünlerin artması ile akademik iletişim süreçleri de değişti. Kütüphanelerde basılı kaynaklarla yapılan araştırmaların yerini veri tabanı, online kaynaklarla yapılan aramalar aldı. Okuma süreçleri bilgisayar ve tablet üzerinden oluşmaya başladı. Maillaşma, anlık mesajlaşma, kişisel sosyal online hesaplarla birlikte iletişim kurma süreçleri de değişti. Akademik çalışmalar online olarak yapılabilmeye başlandı. Akademik alanın yeni medya ve eğitim teknolojileri ile birlikte nasıl bir değişime uğradığı bu sürecin Türkiye'deki akademisyenlerin birbirleri ile iletişim kurma ve ortak çalışmalar yapma süreçlerinde ne tür değişimler oluşturduğu çalışma kapsamında incelenmiş ve araştırılmıştır.

Anahtar Kelimeler: Eğitim Teknolojilerinde Dijitalleşme, Ed,tech, Akademik İletişim, Akademik Etki, Bilimsel Paylaşım, Akademinin Geleceği, Akademik Dönüşüm, Akademideki Dijital İnovasyon, Eğitim Teknolojileri.

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Hepinize beni ben yaptığınız için ve beni büyük bir sevgi ile kucakladığınız, bana inandığınız için teşekkür ederim…

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Sonsuz teşekkür ve saygılarımla…

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1.1. Study

In early decades of 20th century,manufacturing and industrial development changed many issues. Customs of education changed as well. “There was no system of primary education whatever before the Quaker Lancaster (and after him his Anglican rivals)established a sort of voluntary mass-production of elementary literacy in the early nineteenth century, incidentally saddling English education forever after with sectarian disputes. Social fears discouraged the education of the poor. Fortunately, few intellectual refinements were necessary to make the Industrial Revolution.” (Hobsbawm, 1987, p.30). 21th century opened the door with another revolution known as knowledge and information society revolution. The technologies have been changing very directly and fast. “Major change in the Conversational Age from the Broadcast Age is that more decisions are being made faster at the front lines of business, where a company representative interacts most with its customers.” (Israel, 2009, p. 72). The first change was in social life and later this change was integrated into the scholarly area. Scholarly Communication ecology has been changing as well. “Scholarly communications begin to change when scholars increasingly rely on digital sources for their research and teaching” (Waters, 2013, p. 21). “Lythenn White tells the story of the stirrup and the heavyarmored knight in his *Medieval Technology and Social Change*. So expensive yet so mandatory was the armored rider for shock combatthat the cooperative feudal system came into existencethe equipment.” (McLuhan, 1964, p.237). The changing and innovation of technology start with Gutenberg because he introduced the printing press but Marshall McLuhan’s student Walter Ong said that “Writing is technology. Plato was thinking of writing as an external, alien technology, as many people today think of the computer.” (Ong, 1982, p.

80). But technology did not start with the computer, looking at the other side of technology. People always use some appliances for they want to realizesomething. They make a knife to catch animals; they make a car to go faster. Marshall McLuhan explained “technology as extension of the human body.” (Ülkebaş, 2009, p. 2). And writing is technology too. “Writing (and especially alphabetic writing) is a technology,calling for the use of tools and other equipment: styli or brushes orpens, carefully prepared surfaces such as paper, animal skins,strips of wood, as well as inks or paints, and much more.” (Ong, 1982, p. 80). Walter Ong explains the three periods of cultural changes; first one is oral culture, the second one is writtenculture and the third one is digital, technological culture. The main idea of this written culture is that the digital change, new area of education technologies and those processes affect scholarly communication for academic staff and students. What is the difference of conventional education and digital education or education technologies? Education technology is useful for communicating of all academics and students freely. In this way, they collaborate for projects together very easily. Universities use social media, teaching management systems, Tablet technologies for their education systems. Information allocation process has been changed too.

> “First, the dynamic ways in which papyrologists, medievalists, and early modernists engage with the digital primary sources suggest that an emerging model of data curation may be more appropriate than the special collections model on which scholars have traditionally relied when seeking help from librarians and other information professionals about primary sources. Second, the ways that they communicate about these sources with each other and with students and the public alter the publishing functions normally associated with academic publishers. Finally, the lessons of these

cases suggest the need for key new elements in the academic infrastructure" (Waters, 2013, p. 21).

"The progressive "rationalization" of society is linked to the institutionalization of scientific and technical development" (Marcuse, 1968, p.237).Prior to computer technologies, academics would only retrieve journals or articles in printed form.Today, researchers and academics use the computer catalog and they find the book, article, thesis, etc., very easily. Recently, internet technologies have been emerging.Researchers and academics are able to find information in the internet era dramatically, easily and fast. On the other hand, Web 2.0 technologies changed the world immediately. New media is important part of this process. The new nominatives of this scholarly communication processes have become "Scholarly communication 2.0"(Ponte, 2011, p. 149). Initially, web 2.0 was not used by academic staff. Later on, web 2.0 tools have involved in education technology. Contemporary higher education and k12 education use education technology and web 2.0 tools in their communication process. First of all "Web 2.0 is least used for monographs and handbooks while there are more cases of use of scientific articles and educational material" (Ponte, 2011, p. 150).The other subject of this area is the stage afterWeb 2.0and scholarly communication."The features of Web 2.0 might be best exploited by researchers for scientific articles and educational material"(Ponte, 2011, p.153). All of the academic and education specialists use the Web 2.0 tools and education technology in their learning and process developing because this is a very useful and easy communication model. "The Web provides us with new means to make knowledge available and to advance research, but whether this promise is fulfilled depends on progressive research policies, as well as further research on how to combine free access with quality assessment."(Ponte, 2011, p.155).

"1.What is New Media?" – The digital medium itself, its material and logical organization. 2. "The interface" – the human-computer interface; the operating system (OS). 3. "The operations" – software applications that run on top of the OS, their interfaces, and typical operations. 4. "The Illusions" – appearance, and the new logic of digital images created using software applications. 5. "The Forms" – commonly used conventions for organizing a new media object as a whole (Manovich, 1995, p. 11).

This process of new media has been integrated into scholarly communications. This process is interactive. Scholarly communication is an interactive process. This paradigm has occurred because the researcher is author and reviewer same time. Researchersand academics access other universities' researchers and academics very easily for collaborating on projects and this process is realized online. The internet and technology is the bright idea for social science and social area because the communication process is very easy and useful for the scholar area. "Genius, in the popular conception, is inextricably tied up with precocity- doing something truly creative, we're inclined to think, requires the freshness and exuberance and energy for youth." (Gladwell, 2009, p.297). The future of scholarly communications in education processes is defined by the academic use of concept and model. Thus, there are two models of scholarly communication: the conventional model and the technological model.

Giles said that the major components of this model were in place for the social science and in communication with political science. The second important model is the Cyberspace model. This model presents the best scholarly communication process with the integrated computer technology. (Giles, 1996, p.614-615)."This has changed as technical development entered into a feedback relation with the progress of the modern sciences." (Marcuse,

1968).On the other hand, scholarly communicationis changingalong technological transaction and people are connecting to others very easily and frequently. Marshall McLuhanapproaches this period with his "Global Village" theory. This has opened a new process for changing the world with the help of communications. Technological development, new media and digital technology are drivers of this process. "Globalization has been accompanied by the creation of new institutions that have joined with the existing ones to work across borders. In the arena of international civil society, new groups, like the Jubilee movement pushing for debt reduction for the poorest countries, have joined long established organizations." (Stiglitz, 2002, p.8).Globalization and the changing technology go together in 21st century because technological development changes the world immediately.What countries face is change, and peoples' beliefs and emotions are changed with technological development as well.

"What is this phenomenon of globalization that has been subject, at the same time, to such vilification and such praise? Fundamentally, it is the closer integration of the countries and peoples of the world which has brought about by the enormous reduction of costs of transportation and communication, and the breaking down of artificial barriers to the flows of goods, services, capital, knowledge and people across borders." (Stiglitz, 2002, p. 7).Globalization is changing the face of the global area but not only the global area. Mass communication also changes technological development and globalization. Global mass communication terminology includes different types.

Global mass communication has some quotes and forms.

These include:

- Direct transmission of media channels or complete publications from one country people in other countries. This covers foreign sales of newspapers and books, certain satellite television channels, and officially sponsored international other broadcast channels.
- Content items of many kinds that are joined to make up part of domestic media output.
- Format and genres of foreign origin that are adapted or remade to suit domestic audiences.
- International news items, whether about a foreign country or, that appear in domestic media?
- Miscellaneous content such as sporting events, advertising and pictures that have a foreign reference or origin.
- The World Wide Web in many different types, understanding this process. (McQuaill, 2010, p. 254).

Those above are the different types of global mass communication. Global mass communication changes with technology. Technology has integrated the social media. Globalization and the social media are equal to each other. The mixing of globalization and mass communication is coming with new terminology, new media and social media. Universities and some of the private universities are using the new media and social media in their academic and social networks."The argument in favor of the wholesale adoption of the new information technology in universities, publishing houses, libraries, and scholarly communication rests the hope indeed the dogma that IT will substantially raise productivity." (Ekman, 1999, p. 2-3). The entire sector has changed with the technological changing.

Benchmarking area is coming closer to that process. “Determining what constitutes informational content becomes the first step in the conversion benchmarking process.” (Ekman, 1999, p. 41). Those processes are changing people’s behavior in researching, finding, talking and others. “Institutional organization is unavoidable it is not an external force impinging on individual freedom of action like Charlie Chaplin’s famous machine; it enables and coordinates individual action, intensifying and directing individual creativity and productivity.” (Hartley, 2012, p. 55).

1.2. Aim

The aim of this research is findingthe effects of new technologies on scholarly communications while using education technologies. What is the value of education technology and new media for scholarly communication perspective?What are the perceptions of academics about of the future of education technology in Turkey?They are using education technology but they are not using it systematically. What is the future process of change education technologiesfor scholarly communication? Education systems and scholarly communications are changed and this change has beenin a global perspective. The “characteristics of the mythical and the modern ways of the understanding the world” is changed with new technologies. (Habermas, 1981, p. 43). This change is diffused throughout all areas of life in a social perspective. “The same rationality problematic that we encounter in examining concepts of action appears in another light when we pursue the question ‘what does it mean to understand social actions?’ There is interdependence between the basic concepts of social action and methodology of understanding social actions” (Habermas, 1981, p. 102). Social media emerges as the most important social action.These social actions have been

integrated into scholarly communications. This process means “Academic Social Actions” using education technologies. Changes in education technologies changes start with “Big Science”. It is looking at the big picture when solving the problem.“The aforementioned episode in the recent history of science illustrates both the intimate connection of modern science with political decision making and a blind spot in the way we interpret that connection. The Kamioka project is plainly “Big Science” in the sense originally intended by Derek Price and Alvin Weinberg.” (Shrum, 2007, p. 1).We firstly see the big science in Kamioka project but Derek Price and Alvin Weinberg reveal this social action with the internet and technology. Those changes have happened in avery short time.People join the internet and social media very quickly. Those are the new Social Actions in the virtual area. This is the cultural fenomenon in the internet. “Cultural science 2.0 ought to be mindful of these attempts from within science to explain culture, as well as to seek to adopt for itself, following Veblen, a more systematic and less animistic method of inquiry. We may think we can do a better job of explaining culture than the physicists and neuroscientists have done so far, and certainly a better one than the positivist quantoids managed in what the sciences know, and we need to convince them that what we have to say should be added to the knowledge base rather than continuing to be discounted as non-scientific.” (Hartley, 2012, p. 40).Technology has changed the face of finding knowledge and information process as well. “The introduction of any kind of new technology is often a painful and time consuming process, at least for those who must incorporate it into their everyday lives.” (Ekman, 1999, p. 17). Technology is integrated into people’s daily lives and later this process is integrated into all of the life areas. “This is particularly true of computing technology, where the learning curve can be steep, what is learned changes rapidly, and ever more new and exciting things

seem to be perpetually on the horizon." (Ekman, 1999, p. 17). Learning process is changed with technology because the new generation has integrated and adapted technology very quickly. The academic person who wants to understand the students quickly and communicate with students and other academicians should use and adapt technology. Those structures change the face of scholarly communication area. "Objective structures make it possible for scholarly communication to be seen as chunks of information that can be put together in different ways." (Ekman, 1999).Cultural setting and cultural science change the academic communication process. The new type of cultural science 2.0 used in academic areas ischanging the face of academic era. "Cultural science 2.0 that is an important focus for future work must be a population wide analysis in an evolutionary approach. Cultural studies have made significant progress in reconceptualizing culture, creativity with it, as part of ordinary life rather than as the emanation of individual genius or corporate power. But it has not followed through on the implication of this move. It is no good looking at creativity, culture, or knowledge as professional or expert systems, whether individualist or corporate, any more than it would be to see them as expressions of spiritual inspiration or natural laws (in Veblen's sense). We need to understand cultural, creative and knowledge systems across whole populations." (Hartley, 2012, p. 54).

1.3. Problem statement

New technologies and education technologies have been integrated into scholarly communication in Turkey. What is the meaning of this process for academia, academic education and the countries changing their education systems?

1.4. Hypothesis

Education technology has been changing scholarly communication in Turkey through diffusions of Academic "Social Actions".

1.5. Research Methodology, Research Sample and Data Acquisition

Research methodology is part of the research for understanding the type of the research process. "As a research methodology, ethnographic researchrequires avoidance of theoretical preconceptions and hypothesis testing in favor of prolonged direct observation, especially participant observation, attempting to see social action and the activities of daily life from the participants' point of view, resulting in a long detailed description of whathas been observed."(Tavakoli, 2012, p. 199).

Research methodology focuses onsolving the research problem. "Research methodology is a way to systematically solve the research problem. It may beunderstood as a science of studying how research is done scientifically. In it, we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology." (Kothari, 2004, p. 8). Methods used during this research vary.

Two different methods were used in this research. Both support each other, and the collected data were analyzed by two different methods.

The purpose ofdata colleciton technique is to reach more people in public.

“Keeping this in view, research methods can be put into the followingthree groups:

1. In the first group we include those methods which are concerned with the collection ofdata. These methods will be used where the data already available are not sufficient toarrive at the required solution;

2. The second group consists of those statistical techniques which are used for establishingrelationships between the data and the unknowns;

3. The third group consists of those methods which are used to evaluate the accuracy of theresults obtained.” (Kothari, 2004, p. 8).

Methodology constitutes an important place in the research process. Research also determines which data should be used for what purposes. Method and methodology are explained in this section.

Research methodology includes two phases. Those phases are the SPSS analysis and in-depth analysis questions.

Statistics Research

21st century is a important century because everyday new knowledge is being added to people’s lives. Research is the most important part of 21st century academic era. “Data kind and count is growing rapidly on recent information era that we are in and the importance of data analysis is increasing.” (Durmuş, 2015, p. 7). Nowadays, evidences are being produced and reviewed in a shorter time

with the help of easy applied methods and software, especially on social and natural sciences.“In general, one of the key points that must be established as early as possible is which of the variables are seen as being dependent and which independent. A variable is termed independentif, for a particular research question, it is hypothesized as being the cause or origin of some effect on a *dependent* variable.” (Sapsford, 2006, 2010).

Data analysis is an important part of the statistical analysis. Technology development is a part of the statistical researches in 21st century because research is very important for understanding and analyzing the social environment. Statistical research is very important for finding scientific data. “Research usually includes methodological limitations in the discussion. How the specific measures, sampling, cases, location, or other factors restrict the generalizability of findings or open up alternative explanations.” (Neuman, 2006, p. 123).

The researcher hadone-to-one conversations for data collection and used them in the in-depth analysis. An evaluation should be carried out and the collected data should be analyzed. In-depth interviews and analysis must be included in recognition of good personal relationship. “Keep meetings focused—Meetings with multiple people can certainly be beneficial and offer insight (which I will detail shortly), but they can also lose focus quickly. One-on-one meetings are easier to keep focused and on point. Different people have different presentational styles and possibly different agendas (on both sides of the table), and the result may lead to less informative meetings.” (Travers, 2012, p. 219). Understanding people is easy while using in-depth analysis. “When I conduct meetings, I

typically use information from the first meeting to challenge the person whom I am meeting next and so on down the line. For example, if I am meeting with three team members in the following order (analyst, portfolio manager, risk manager), I may ask the analyst:

1. Name one thing you would change about the investment process.

2. Name one thing you would change about the risk process." (Travers, 2012, p. 220-221).

One of the most important steps in one to one interviews is to establish a good connection with the interviewer. You need to prevent the dissolution in the subject. It is important to continue the interview while understanding and asking questions to other person.

Historical Descriptive Methodology:"The birth of modern scholarly communications can be dated to the second half of the 17th century with the launch of the Journal des Savants in1665 and the Philosophical Transactions of the Royal Society in 1666". (Gorman, 2005, p. 99). The sequence of the methodology was as follows:

1. Studying the historical process and realizing historical analysis.
2. Analyzing the scholarly communications process and type of scholarly communications in the 21th century studying scientific outcomes of previous research and data.
3. Reflecting on technological development backgrounds of scholarly communication and differences before and after the Internet and social media.

4. Analyzing the new academician social area network.

Private and state universities in Istanbul, Turkey were used for data acquisition. Academic staff of these universities consist the population of the research.

Population of Turkey is 78,741,053 people as of 31 December 2015. The population residing in Turkey increased by 1,045,149 compared to the previous year. The percentage of men in Turkey is 50.2% (39,511,191 people) and the percentage of women is 49.8% (39,229,862 people).

The annual population growth rate of Turkey was 13.4 per thousand in 2015. The annual population growth rate was 13.3 per thousand in 2014 and 13.4 per thousand in 2015.The rate of people living in centers of cities and towns are 92.1%. The rate of people living in centers of cities and towns were 91.8% in 2014 and the rate increased to 92.1% in 2015. The rate of people living in towns and villages were 7.9%.

The population residing in Istanbul showed increase of 2% compared to the previous year. 18.6% of the population of Turkey lives in Istanbul, and it is the most populated city in Turkey with 14,657,434 people. The following cities are Ankara with 6.7% (5,270,575 people), Izmir with 5.3% (4,168,415people), Bursa with 3.6 % (2,842,547 people) and Antalya with 2.9% (2,288,456). The province of Bayburt is the least populated city with 78,550 people. The median age in Turkey has increased. The median age used to be 30.7 in 2014, and it became 31 in 2015 with an increase. The median age of men is 30.4 and the median age of women is 31.6. The provinces with the highest median age are Sinop (39.3),

Balıkesir (38.8) and Kastamonu (38.3), and the provinces with the lowest median age are Şanlıurfa (19.3), Şırnak (19.5) and Ağrı (20.3). (Uçar, 2013).

Four of these universities are private universities.

B University, P University, B University, Y University

Two of them are governmental universities: İ University, M University

Analysis method is in-depth analysis with universities academic staff "The Collaboratory for quantitative e-Social Science node aimed to develop tools and services to advance the state of the art in quantitative methods. It focused on developing middleware that would allow users to exploit distributed research resources such as datasets and more powerful computational facilities while continuing to be able to employ their favorite desktop analysis tools." (Jankowski, 2009, 75).The research is about the academic staffs' academic communication and scholarly communication when they use education technology. Academic staff's scholarly scientific collaboration for using education technologies and new media was examined. In content analysis, researchers examine artifacts of social communication. Typically, these are written documents or transcriptions or recorded verbal communications. Content analysis is a useful analysis method of communication research. The research process used qualitative and quantitative data. One of the leading debates among users of content analysis is whether analysis should be quantitative or qualitative. Berelson (1952), for example, suggest that content analysis is objective, systematic, and quantitative.

Table 1

Academic information of universities of Turkey according to TUİK (Turkish Statistical Institute)

Yükseköğretimde öğretim elemanı sayıları
Number of teaching staff at higher education
2013/'14 Akademik yılı/ Academic year

		Toplam	**Prof.**	**Doç.**	**Y.Doç.**	**Öğr.Grv.**	**Okutman**	**Uzman**	**Arş.Grv.**	**Çevirici**	**E.Ö.Pl.**
		Total	Prof	Assoc Prof	Asst Prof	Instructor	Language Instructor	Specialist	Research Assistant	Translator	Ed & Tng Planner
Üniversiteler Toplamı	**Toplam/**	**142437**	**20005**	**12839**	**31345**	**20471**	**9990**	**3672**	**44074**	**19**	**22**
Total For The Universities	**Erkek/**	81504	14265	8479	19157	11588	3809	1883	22306	5	12
	Kadın/	60933	5740	4360	12188	8883	6181	1789	21768	14	10
Önlisans	**Toplam/**	**16636**	**239**	**285**	**2151**	**12735**	**592**	**377**	**257**	**0**	**0**
Vocational Training School Programs	**Erkek/**	10135	190	191	1351	7668	343	246	146	0	0
	Kadın/	6501	49	94	800	5067	249	131	111	0	0
Lisans	**Toplam/**	**120535**	**19521**	**12417**	**28939**	**7652**	**9365**	**3223**	**39378**	**18**	**22**
Undergraduate Programs	**Erkek/**	68781	13916	8217	17655	3871	3454	1611	20040	5	12
	Kadın/	51754	5605	4200	11284	3781	5911	1612	19338	13	10
Enstitüler	**Toplam/**	**5213**	**245**	**136**	**250**	**76**	**7**	**65**	**4433**	**1**	**0**
Graduate Schools & Institutes	**Erkek/**	2568	159	70	148	48	4	21	2118	0	0
	Kadın/	2645	86	66	102	28	3	44	2315	1	0
Araştırma Merkezleri	**Toplam/**	**53**	**0**	**1**	**5**	**8**	**26**	**7**	**6**	**0**	**0**
Centers For Application & Research	**Erkek/**	20	0	1	3	1	8	5	2	0	0
	Kadın/	33	0	0	2	7	18	2	4	0	0

Kaynak: Yükseköğretim İstatistikleri 2013-2014
Source: Higher education Statistics 2013-2014

Note. The table reveals the number of the academic staff working in Turkey and the relevant statistical data.

Phase 1: Indepth Analysis

In-depth analysis is part of the research.

Phase II: Survey

University academic staff comes from different age groups. The positive and negative changes in their lives after using education technologies were asked.The survey is about the scientific

scholarly communication model in social media. The academic staffs were Linkedin and Facebook users, and what collaboration process they were using in their academic sharing was asked. The survey was analyzed using SPSS. The social media process in academic scholarly communication for academic staff in Turkey's different universities was researched. As a crowded population area in Turkey, Istanbul was used for the research 4 different universities. The TUİK statistics for the most three crowded cities were used. (Uçar, 2013).

Four of these universities areprivate universities, and two of them are state universities.

B University, P University, B University, Y University

İ University, M University

The academic staffs of these universities joined our survey and we analyzed the utilization of social media and educational technology of these academics. Firstly, the researcher understood the area and conducted the survey in ITICAM international conference after pilot experience survey. Fifty international academicians, coming from different countries joined the survey and answered the social media question. This survey and answers were later used for the model of the main survey question. The survey was organized for using likert scale.Analyzing and understanding academic area and their education technology utilization were important. The survey was analyzed in the SPSS and the model of the Istanbul-Turkey academic technological user model was found. The pilot survey was conducted with fifty academicians coming from different countries. Those academicians came to the ITICAM International Media and Trends Conference in Russia. "We hope that most researchers would proceed with their research ethically even without these regulations; nevertheless satisfying all the

requirements as determined by the federal regulations and carried out by IRBs can be difficult when applied to digital research because these networked spaces did not exist when the federal regulations were first articulated." (McKee, 2007, 28).

> "Factor analysis is a method of data reduction. It does this by searching underlying hidden variables that are reflected in the observed variables. There are many methods of conducting factor analysis (ex. principal axis factor, maximum likelihood, generalized least squares, unweighted least squares). There are also numerous types of rotations after the first extraction of factors. These factors include orthogonal rotations, such as varimax and equimax, which contains the restriction that the factors cannot be correlated, and oblique rotations, such as promax, which allow the factors to be correlated with one another. In addition, the number of factors to be extracted should also be specified. Considering the number of factor analytic techniques and options, it is not surprising that different analysts could reach very different results analyzing the same data set."

"Factor analysis is a technique that requires a large sample size. Factor analysis is based on the correlation matrix of the variables involved, and correlations usually need a large sample size before they stabilize. Tabachnick and Fidell (2001, page 588) cite Comrey and Lee's (1992) advice regarding sample size: 50 cases is very poor, 100 is poor, 200 is fair, 300 is good, 500 is very good, and 1000 or more is excellent. As a rule of thumb, a bare minimum of 10 observations per variable is necessary to avoid computational difficulties." (Bruin, 2006).

1.6. Research Limitations and Constraints

A limitation of the research is that some of the academicians did not want to join the survey. Some of them joined the survey but they did not want to join the in-depth analysis. The older academicians sometimes do not understand the questionortechnological terminology.“A useful discipline for the researcher, therefore, is to bear firmly in mind precisely which elements were available in the intended population to be described, then the sample will also be unrepresentative. For this reason, great care should be taken in deciding just what sources will provide the sampling frame for a survey before the frame is set up and the sample drawn.” (Sapsford, 2006, p. 28-29). There are 195 universities in Turkey where academicians do their researches. (Durmuş, 2015). Research data is collected from different universities in Istanbul. Researcher has done her own research in Istanbul due to restricted sources and also due to the fact that the biggest universities exist in Istanbul.“The main drawback of the approach is concerned is that the need for prolongedengagement with the participants in their natural setting requires an extensive time investment that few academic researchers can afford. A further limitation of ethnographic studies is how to strike a balance between the insider and outsider perspective.” (Tavakoli, 2012, p. 200). Another limitation of this research is that the academicians come from different cultures and demographic sites.

1.7. Research Goal, Research Import, Research Question

1.7.1. Research Goal

The academician's scholarly communication in digital age constitutes the research goal of this research. Digitalization has changed the communication process. Communication and research compose an important part of academic era.

Digital Technologies, new media, social media and education technologies have transformed and changed communication process in academic era. "Research in common parlance refers to a search for knowledge. One can also define research asa scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge." Redman and Mory define research as a "systematized effort to gainnew knowledge." (Kothari, 2004, p. 2). In the research part; reflection of technological changes in communication processes for academic area has been investigated. Research process has been formed by the technology users in academic communication. As a result of digitalization and technological change, transformation has occurred in education and the academic processes. The communication process has been accelerated by the use of educational technology usage in academic processes. The scope of this research is to find how new media has changed and shaped academic communication and educational technology.

Communication is an old concept in human history. The people who were in contact with each other started to produce knowledge and share it. From the first age of time, communication process has been changing and reforming. Adaptation of technology in 21. Century's educational and academic processes is increasing. Educational technology usage has increased in the processes of Education and Communication issues. The main objective of this research is theunderstanding of how process of academic communication is used in universities.

1.7.2. Research Import

Academic collaboration or scholarly communication process is very important for digital century that we live in. Academic area has changed by digital transformation. New media: social media is the important part of this process. "Why does the scientist collaborate? Part of it is a result of what is often called the "division of cognitive labor." As science has become ever-more specialized and as the number of subfields within each discipline has proliferated, it has become difficult for a single person to know everything he needs to know." (Surowiecki, 2007, p. 161). An important part of the research is to find the changing process in digital communication area.Solving the research question is an important part of the researches based on problem solving.The aim of this thesis is to bring up the change in scholarly communication process by technological developments. "The scientific method is, thus, based on certain basic postulates which can be stated as under:

1. It relies on empirical evidence;

2. It utilizes relevant concepts;

3. It is committed to only objective considerations;

4. It presupposes ethical neutrality, i.e., it aims at nothing but making only adequate and correct statements about population objects;

5. It results into probabilistic predictions;

6. Its methodology is made known to all concerned for critical scrutiny is for use in testingthe conclusions through replication;

7. It aims at formulating most general axioms or what can be termed as scientific theories." (Kothari, 2004, p. 9-10). There are some methods which should be followed in academic researchs. Being objective, critical thinking, reaching and determining the right population are important in these methods. The method that is used within the scope of this research depends on two bases: in-depth interviews with academics and the data collected from surveys. The scope of this research is to define the changing communication process between academics.Academic studies and research technologynowadays are in the scope of the research, and the research aims to find how much the communication process is used, create a prediction about what will happen in the future in the field of study and therefore intends to fill a gap in the field.

1.7.3. Research Questions are

4 questions areused to support the thesis hypothesis.

Has theuse of education technologies changed the processes of scholarly communication?

Which materials and media are particularly used in the processes of scholarly communication?

What are the usage rates of education technologies in scholarly communication?

What opportunities do the organizations of the academicians provide them in the processes of scholarly communication?

1.8. Brief literature review

Social studies work on the change related to technological development, affecting scholarly communications. The meaning of theories is “a process of developing ideas that can allow us to explain how and why events occur”(West, 2004, p. 44). Every theory ispart of a grant theory: “grant theory that attempts to explain all of a phenomenon such as communication” (West, 2004, p. 44). Marshall McLuhan has theories of “Mechanical Bride”, “Technology is extension of human body” and “Medium is the Message”. Those are theories of technological development processes and focus on the effects in people’s lives and social spheres. Walter Ong, his book “Orality and Literacy emphasizes that “Writing is the technology”, “The reason is that the term can give a false impression of the nature of verbal communication, and of other human communication as well. Thinking of a ‘medium’ of communication or of ‘media’ of communication suggests that communication is a pipeline transfer of units of material called ‘information’ from one place to another.” (Ong, 1982,p. 171). Donald J. Waters studied the “Changing ecology of scholarly communication using education technology and new media perspective”. (West, 2004, p. 43).Social sciences are part of scholarly communications. Communication theorists use social sciencesfor studying social effects of technological development process. “In all those processes, everyday communicators follow the basic outline advanced by social science” (West, 2004, p. 43).

Technology starts with the alphabet but Gutenberg’s initiation of the printing press later changed communications dramatically.“Gutenberg’s invention of the movable type printing

press in the mid-fifteenth century brought a revolution in written communications. The printing press made possible the production of a larger number of manuscript copies, in a more consistent form, and at a far lower cost than possible by professional copyists. Within 30 years of its invention, the printing press was in use throughout Europe and with the publication of the "Gutenberg" bible in 1456, the basis was established for the development of the modern publishing industry. Gutenberg's invention increased dramatically the potential for the diffusion of knowledge and information. In turn, by increasing the speed and breadth of scholarly communication, the printing press increased the rate at which knowledge was created. More scholars and scientists were able to learn about and to respond ideas and research results and to do so faster" (Giles, 1996, p. 613). This is accelerating the communication process. Knowledge is reaching everywhere and travels globally on higher speed than Gutenberg's technology. Internet technology changes the face of knowledge's however the true knowledge problem comes together with this technology. Education technology attempts to solve this problem andorganizes research options for academics and students. Knowledge has not changed but finding knowledge has beenchanged. New knowledge and new development are an important part of Academic staff's communication model. The name of this process is scholarly communication.

"Anyone interested in scholarly communication probably has noted the parallels in the conduct and publication of research, such as;

• The importance of quality, e.g. the peer review of research grants proposals and of papers submitted to publication;

• The increased internationalization, e.g. scholars collaborate in international networks and journals recruit editors and reviewers globally; and

• The increased volume, i.e. the rapid global expansion of research drives the growth of published outcomes" (Vaughn, 2013, p. 27). The scholarly communication is close to scholarly publishing. The scholarly publishing has been affected by the Internet and new technologies, and scholarly communication as well. "The system of scholarly communications that has existed for hundreds of years consist of research and other scholarly writings creating free of charge, edited or peer-reviewed also free of charge, printed and published at cost, and sold to libraries and research institutions for dissemination" (Yiotis, 2005, p. 157). The printing press is very useful for inexpensive book printing because of serial printing or serial manufacturing. This process later was replaced with the Internet. "The creation of the internet in 1983 and particularly the advent of the World Wide Web with its graphic interface provides the basis for another revolution in communications, one that will rival if not exceed that spawned by Gutenberg. The ramifications of the Web have been the subject of considerable attention in both the popular and scholarly press" (Giles, 1996, p. 613).The academic paper writing process and printing process has changed as well. Electronic publishing is anintegral part of publishing in our time. Academic researchers search the database and findnew articles on their specific subjects among other researchers' papers. They find new knowledge and research electronic publishing resources and databasesvery easily. "Several benefits would accrue from electronic publishing. Researchers would benefit by increasing the impact ofthe scholarly community, and also would benefit by enabling free, unrestricted access to communications" (Yiotis, 2005, p. 158). In addition,technology changes the face of culture because the Internet and Web 2.0 technologies change the conventional ways. Technology is the new culture, and new technologies, education technologies and new media change the Scholarly Communication Culture for academics and students and all of therelated processes.

Pierre Bourdieu wrote about cultural theory in his book*The Reproduction of Culture.*Scholarly communication culture has changed. “The specific role of the sociology of education is assumed once it has established itself as the science of the relations between cultural reproduction and social reproduction. This occurs when it endeavours to determine the contribution made by the educational system to the reproduction of the structure of power relationships and symbolic relationships between classes,contributing to the reproduction of the structure of the distribution of cultural capital among these classes. The science of the reproduction of structures, understood as a system of objective relations which impart their relational properties to individuals whom they preexist and survive, has nothing in common with the analytical recording of relations existing within a given population.” (Bourdieu, p. 56).Education technology is thereproduction of new culture for academic users and their students. “The role of educational system contributes to the reproduction of the structure of the distribution of cultural capital” (Bourdieu, p. 57).Technological transaction is affected from almost any factors. Education and scholarly communication is one area among these transaction processes. These processes are going to be a *cultural capital. “*The educational system reproduces all the more perfectly the structure of the distribution of cultural capital among classes (and sections of a class) in that the culture which it transmits is closer to the dominant culture and that the mode of inculcation to which it has recourse is less removed from the med of inculcation practiced by the family” (Bourdieu, p. 57).

2. HISTORICAL BACKGROUND AND THEORETICAL FRAMEWORK

The theoretical framework is important to understand the communication between technology, communication and scholarly communication. “The last three decades have been marked by the gradual digitalization of human culture, knowledge and learning. Evolving digital media and technologies – such as computers, the internet and mobile devices – have been constantly generating new waves of promises and fads.” (Markauskaite, 2010, p. 79). The face of communication changes with technology. Digital devices and social media is usefull for peoples communication process. Technological artifacts and computers could be useful for assisting with or doing some traditional cognitive tasks (Markauskaite, 2010, p. 92). Traditional communication process starts with oral culture. Walter J. Ong calls it “The Technologizing of theWord” his book of *Orality and Literacy*. Firstly, oral culture starts with the first communication process. People tell and memorize the cultural things. Second of them is literacy when the first letter of Semitic alphabet using this literacy culture process started. “When this is all said, however, about the Semitic alphabet, it does appear that the Greeks did something of major psychological importance when they developed the first alphabet complete with vowels. (Ong, 2002, p. 5). Later on, technology integrated the writing process with Johannes Gutenberg’s printing machine. This is the printing revolution because writing something is quite faster. Before the writing machine, the books were only one copy but after the machinemany copies of one book were possible.At a later time, the human identity changed because reading and writing process is very easy. Finding some new knowledge and information process is very easy “Many of the features we have taken for granted in thought and expression in literature, philosophy and science, and even in oral discourse among

literates, are not directly native to human existence as such but have come into being because of the resources which the technology of writing makes available to human consciousness. We have had to revise our understanding of human identity." (Ong, 2002, p. 88). Academic process changed with Gutenberg's press. Reproducing a book is very easy. "Darwin and Gutenberg, inventor of the printing press, were as honored among radicals and social democrats as Tom Paine and Marx. Galileo's 'And still it moves' was persistently quoted in socialist rhetoric to indicate the inevitable triumph of the workers' cause." (Hobsbawn, 1987, p. 263). The third change of this process is computer and internet. "The reduction of cost and increase of prices undoubtedly helped academic publishers to relieve the pressure of margins, but neither of these strategies would enable them to arrest or reverse the pattern of declining sales." (Thompson, 2012, p. 117). Organizational culture has changed with scholarly communication process.Academic staff uses the technological devices when they research or collaborate with others about their scholarly work."The New Criticism itself zeroed in from the first on Englishlanguage texts and did so mostly in an academic setting where discussions could develop on a scale larger, more continuous, and more organized than that of earlier occasional criticism of vernacular works" (Ong, 2002, p. 160).

Information is given regarding the processes of scholarly communicationand education technologies that constitute the main purpose of the study in the sense of when they emerged, how they developed and how they took shape.

The historical background of communication is started withoral culture, later this process changed with writing culture. Communication is the process. "First, we believe that communication is a social process. When interpreting communication as social, we mean to

suggest that it involves people and interactions, whether face-to-face or online." (West, 2010, p. 4-5). Communication is the social responsible for people to communicate with each other actively and directly. Communication has a social action from people to people. It is sometimes face to face, sometimes uses another machine. Communication is a changing process from year to year. "Kaherine Miller (2005) underscores this dilemma, stating that of communication has been abundant and has changed substantially over the years.Sarah Trenholm (1991) notes that although the study of communication has been around for centuries, it does not mean communication are well understood." (West, 2010, p. 4-5).The face of communication is changingin 21st century. Communication is not static process, meaning and symbol is important for communication process. In fact, Trenholm proactively illustrates the dilemma when defining the term. "New communication tools are changing organizational communications across industries. Corporations have adopted new communication channels such as Twitter, Facebook, and Youtube to enhance brand positioning and to listen to their consumers and competitors." (Wankel, 2011, p. 28). Social media changing the communication process fast. New media is giving a new role for face to face communication. This new role is virtual face to face communication model. "Communication has become a sort of portmanteau term. Like a piece of luggage, it is overstuffed with all manner of odd ideas and meanings." (West, 2010, p. 4-5).

2.1. Communication

Communication is the processes of people's mindsbeing in good communication with others' minds. That process is sometimes an oral and sometimes written culture. Third wave of communication is the digital culture. "Communication scholars may approach the

interpretation of communication differently because of differences in scholarly values. With these caveats in mind, we offer the following definition of communication to get us pointed in the same direction." (West, 2010, p. 5).But there are some differences in these definitions and terminology. Scholarly communication area has changed with digital process. "Scholarly objects are available online in multiple forms and places. Articles may be described by several indexing and abstracting services, and their full content may exist in more than one database." (Borgman, 2007, p. 9). Academic research and finding some research databases are quite easier than before. Technological development process has changed the face of academic staff researching and scholarly communication process. "The process of communication also means that much can happen from the beginning of a conversation to the end. People may end up at s very different place once a discussion begins." (West, 2010, p. 6). Communication process varies from person to person.One way communication process is possible on the internet but social media gives a chance to people for two-way communication with each other."One way to think about the consequentiality of culture for globalization, then, is to grasp how culturally informed local actions can have globalizing consequences. The complex connectivity of globalization is not just the ever tighter integration of social institutions; it is at the same time integration of individual agency into the working of institutions. Thus cultural connectivity discloses the increasing reflexivity of global modern life." (Held, 2007).Global modern life is changing the systematic of the education and the cultural settings in the world. The name of this new culture is modern technologic culture. Those processes affect the communication process. "Individual and cultural changes affect communication. Conversations between siblings, for example, seem to have shifted from the 1950s to today." (West, 2010, p. 6).

2.2. Technology

Technology is rapidly changing in the 21st century. The name of the new communication process is technology. Globalization and technology are important parts of the new digital world. “The critical analysis of globalization discourse presented here also applies to the so called neoliberal discourse which many have identified as the dominant discourse of globalization process.” (Held, 2007, p. 138). Technology gives a chance for global digital world in social media. People communicate with each other easily. The name of this process is transformation of communication. The academic person communicates with each other very easily too. “The scholarly enterprise has been integral to the formulation of these shifts and that enterprise itself has been the subject of transformation. Introduction of the experimental method is associated with such a shift, as is evolutionary theory; the switch from Newtonian physics to general acceptance of Einstein’s theory of relativity also reflects such transformation.” (Jankowski, 2009, p. 3). Transformation process in the communication area changes people’s daily lives. On the other hand, academic persons’ (Tekdoknamik person) daily routine changes with technology. This process is transformation for communication process. Communication process changes with technology from year to year. “In 1949, Claude Shannon, a Bell Laboratories scientist and professor at the Massachusetts Institute of Technology, and Warren Weaver, a consultant on projects at the Sloan Foundation, described communication as a linear process. They were concerned with radio and telephone technology and wanted to develop a model that could explain how information passed through various channels. The result was the conceptualization of the linear model of communication.” (West, 2010, p. 11).Change is in every area, and an important part of that constructivism is social

effect.When one person uses the social media and education technology in his/her academic communication process, the other uses them as well. Globalization is social expansionism. “A final contribution of social constructivism to the study of globalization processes concerns their normative implications and particularly the question of how these processes can be subjected to political steering.” (Held, 2007, p. 139).

2.3. Scholar in Social and Technical Contexts

Scholarly activities are the social actions of academic staff. Technical framework of scholarship is the understanding of the social development and social changing. “Building a technical framework for scholarship is much easier than understanding what to build, for whom, for what purposes, and how their usage of the technologies will evolve over time. People will adopt new technologies if they perceive a sufficient advantage over the present methods to justify the costs and efforts involved.” (Borgman, 2007, p. 3). The academic researcher is using education technology and social media in his/her research. This is the academic research perspective of the new research of the academic development.“The most prevalent of these are: e-science, cyber infrastructure and e-research. These terms have historical antecedents and competitors for prominence. Beginning with the past, one alternative conceptualization is Big Science which initially described weapons related research during World War II, particularly the Manhattan Project mandated to construct an atomic bomb. Big Science continued through the Cold War and reflected government and national security.” (Jankowski, 2009, p. 4).

Scholarly communication and research process constitute the academic communication model when using education technology.

Scholarly Communication Processs

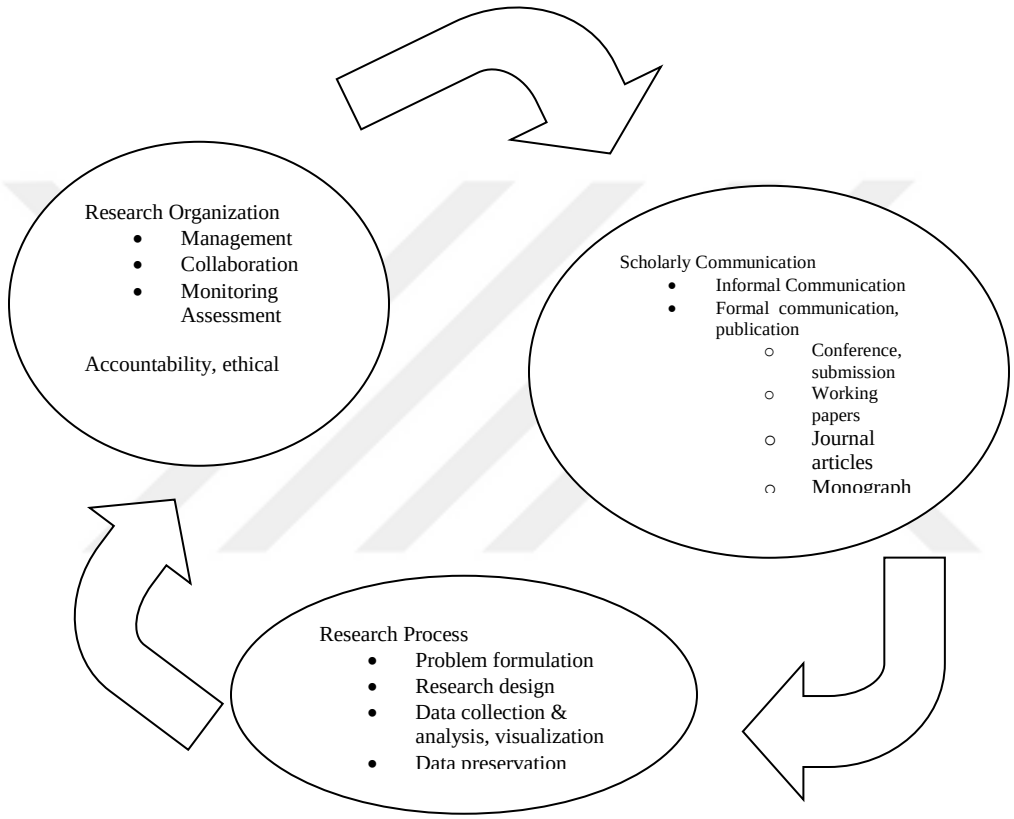


Figure 1

Notes: (Jankowski, 2009, p. 8).

Scholarly communicator academician is firstly organize their research; those research parts are management, collaboration, monitoring assesment. This process must be an ethical process. Scholarly communication has two parts, and those are informal and formal communication model. Formal communication model has four types; conference, submission, working papers, journal articles and monographs. Research process is the important part of the academic

scholarly communication. Research process has four parts. Those are problem formulation, research design, data collection & analysis, visualization and data preservation. “Authors submit papers to repositories organized by their disciplines, institutions, and funding agencies, in addition to submitting them for publication and posting them on their own Web sites.” (Borgman, 2007, p. 9).

New research and finding data model have changed. People find new things to research in the internet area. “Paul Otlet’s bibliographic networks of the 1930s were a precursor to hypertext.” (Borgman, 2007, p. 11).In the early decades of 19th century, people used to find the data and information in the library. They used to find statistics, news, etc. and all the old research process took place in the library. When the new media and new technologies started with the World Wide Web, the research process changed immediately. New terminology is very useful both for the researcher and academician. They find the information and data very easily. Digital library is the other important news for the researcher and academician. 21st century researcher and academician collaboration process is going easily with the Internet and social media.

“Technologies of Information Infrastructure:

1. The Internet: The above definition captures the essential aspect that the Internet is a network around the world.” (Borgman, 2007, p. 14).
2. “The World Wide Web: Despite the frequency with which the Internet and the World Wide Web are conflated in the popular press, they are not coextensive.” (Borgman, 2007, p. 15).

3. “The Grid: In the most general sense, a computing grid is analogous to an electric power grid, which provides pervasive access to electricity.” (Borgman, 2007, p. 17).
4. “Digital Libraries: Since it was first coined, the term “digital libraries” has been an oxymoron: if it is a library, it is not digital; if a library is digital, it is not a library.” (Borgman, 2007, p. 17).

At first people believed that the digital did not meet the real library functions but later the time kindle, I-pad and other useful tablet books have changed people’s beliefs. “Major investments in the 1990s to build a generic information infrastructure were instrumental in the expansion and commercialization of the Internet.” (Borgman, 2007, p. 21). Both researching process and academic collaboration process have changed with the Internet. Research is the important part of the academic investment. Academicians with academic achievement use the Internet and find the news on the Internet, in addition, academicians who used to prefer the old style research and other academics research on the Internet as well. That area is useful for academic scholarly communication model. Before the Internet and World Wide Web, the researcher and academician had to spend a lot of time and money to find new things or find the data or information for their research or article.“The money being spent to develop and deploy e-research is spread across many projects, disciplines, and countries. Important research is taking place under formal e-science, e-social science, and cyberinfrastructure programs.” (Borgman, 2007, p. 25).People communicate with each other by easily using the Internet, World Wide Web and social media. This is the new process for academic communication and scholarly communication. In his book “*Global Village*”, Marshall McLuhan revealed the real terminology of the Internet and new media. “Big science is the term used in at least two

senses. As originally coined, it refers to the large scale, monumental enterprises through which societies express their aspirations." (Borgman, 2007, p. 28).

2.4. Creative Destruction and Disruptive Innovation

Creative destruction occupies an important position in the processes of scholarly communication that is shaped with education technologies. The concepts of generating innovation, following innovation and innovation are related to academic production. The concept of creative destruction has gained importance in the 21st century when scholarly communication has accelerated with education technologies.

Globalization is changing the world culture rapidly. This change first started with industrial revolution but the latest education revolution went on a global perspective. This is the last period of the personal world. Innovation, creativity and learning for life are the important terminological subjects of that time. "Technology and wealth, two prominent features of today's global markets, help drive these multicultural trade relationships. On the supply side, technology gives artists new ways of turning creative visions into marketable products." (Cowen, 2012, p. 19).Creativity is the important part of the 21st century education and communication systems. People who dream something realize it easily by using technology. Technology is giving a key for people to change their creative perspective and creative destruction. The academician research process started with library but the new technologies and creative destruction have changed this process. "It may seem, at first glance, that academic libraries above all have a captive audience. Surely a body of people who are there specifically for the purpose of studying will have to use the material available in the

library. It would be naïve to think that it is better to photocopy the relevant sections from their set texts and pass these out at the beginning of the lecture or seminar to which they apply." (Hamilton, 1990, p. 9). Users and researchers find the research topics and subjects easily to use electronic resources, database and the Internet. "In integrating materials from a variety of sources into a coherent database, the electronic agent may have an advantage over publishers who offer only individual journal titles." (Ekman, 1999, p. 124).

2.5. Scholar Communication

"Science communication cannot exist in a vacuum, however. When talking about vaccination you have to consider parents' instinct to protect their children from any threat, real or perceived." (Grossman, 2014). Science communication and scholarly communication is a process of direct or online communication with others. "The first collaboration relied on standardized instrumentation that was familiar to all specialists in the field; scientific novelty required deploying the instruments in a coordinated fashion." (Olson, 2008, p. 123).Scholar communication is the terminology of collaborating in academic research processes with others. Academicians use the communication tool to communicate with each other. New media and new technologies has changed the collaboration and communication model for academic research and academic scholarly communications. "One way of performing an objective evaluation would be to determine conversion requirements based on the process used to create the original document." (Ekman, 1999, p. 41). Academicians write articles by using research methodology.In the early decades of 19th century, academicians used to follow letters or magazines to track other academicians or researches but it changed with the beginningof 21st century and the Internet. Information and communication technology changed with the

Internet, and interactive communication started with social media. “Since the early 1980s, the scholarly community has been witnessing a considerable increase in the use of information and communication technologies. The networked personal computer, e-mail, the internet, off and online databases, the World Wide Web, electronic publications, discussion lists and newsgroups, electronic conferences, digital libraries, and knowbots are but a few of the trends that increasingly influence the daily work of the scientific community.” (Olson, 2008, p. 33). Personel computer has changed the writing habit of people. Mailing is a useful tool for academicians to communicate with each other but social media is the revolution for academic research and scholarly communication. Printed library has turned to a digital library and this is the new breakthrough point. “One Internet company that struggled with the buy/share issue is Infonautics, which offers a product called the Electric Library. The Electric Library offers full text of 150 newspapers, hundreds of magazines, international newswires, radio transcripts, and many other high quality sources of information.” (Shapiro, 1999, p. 49). Electronic library catalog is very useful for academicians; it helps to research their subjects very easily. “Infonaustics originally planned to market the Electric Library to high school and college students who were writing term papers.” (Shapiro, 1999, 49).The first part of academic research is using library. Academic library’s face has changed with technology, online card catalog and online database is useful for users and researchers. “The term academic library refers in this context to the libraries of universities, polytechnics and colleges of higher and further education. It does not include school and sixth – form college libraries.”(Hamilton, 1990, p. 9). Libraries are the important part of the higher education. Other discipline of academic study is the use oflibrary. “The general public might well include local businesses for example, a library within a college with a strong engineering faculty situated near an

engineering works." (Hamilton, 1990, p. 10). Library is the important part of the research and development process of higher education at the university. An important part of academic scholarly communication is collaboration. The collaborative academic study affects the academic achievement."There is a tension between the benefits to innovation of working across disciplinary and organizational boundaries versus the risks that arise from the costs of coordination and relationship development in these collaborations. Dispersed science and engineering projects are forms of innovation systems that are meant to create, diffuse, and use diverse sources of knowledge." (Olson, 2008, p. 100).Active resource using is an important part of the research case emphasizing finding news and researching the previous research process. An important part of researching process is understanding analysis methodology. "Most corporate cultures are still heavily biased toward quantitative analysis, with its emphasis on precision to as many decimal places as possible." (Fahey, 1998, p. 353).An important part of cultural research methodology is the understanding of the culture and related cultural settings. Quantitative methodology isuseful for quantitative method. Research methodology and online digital library methodology used together by theresearcher focuseson the innovative projects and within all those perspectives. "In the publishing example, the change would include a shift toward lower-cost printing, and the introduction of innovative distribution channels such as online services." (Fahey, 1998, p. 372). Online service is very useful for academicians. There is widespread e-mail usage in the business life. E-mail is useful for academic scholarly communication process. "According to recent estimates, more than 50 percent of the U.S. population uses email every day to communicate with others. On college and university campuses this percentage may in fact be much higher as students communicate with their instructors, other students, and staff members in addition to friends and family."

(Gardner, 2010, 56).They are connected with each other by using the social media or E-mail, and scholarly communication affects their social area. People use the internet while communicating with others.“Email is an interesting form of communication because the language of email has characteristic of both written and spoken language. In addition, our reason for using email mirrors the reason we engage in face to face or phone interactions.” (Gardner, 2010, p. 56).

2.6. Scientific Collaboration

The first step to innovative academic interactions is using the technology. Scientific collaboration is an important part of the academic research and scholarly communication with other academicians. “The qualitative and quantitative study of collaborator design and usage, examining both the technical and social aspects of performance,the creation and maintenance of a Collaboratory Knowledge Base, a Web-accessible archive of primary source material, summaries and abstracts, relevant generalizations and principles, a database of collaborator resources, and other related materials.”(Olson, 2008, p. 4). To use other sources actively, the person must use collaborative data within his/her own research. For finding news indirectly, the data and the database should be successfully managed. In the academic research process, the researcher finds the new thing and later goes to bibliography and finds the other news.This process is the managing of the data process. “The primary purpose of the first step is to broaden management’s perspective by spelling out all of the major identifiable changes the industry could face within the planning horizon.” (Fahey, 1998, p. 372).The first collaboration process has started with theplanning of horizon of thecollaboration principle:“the abstraction and codification of principles, heuristics, and frameworks to guide the rapid creation and

deployment of successful collaboratories, including principles of design or customization."(Olson, 2008, p. 4).

2.7. Scholarly Communication in Research Strategy

Researching tools is the first part of the academic research and academic scholarly communication process. Articles, thesis and all research projects are important part of understanding and applying them to the researching tool. "Doctoral students impacted by academic capitalism are those who work in search sponsored by industry or in areas that might lead to patents. The life of doctoral students affected by academic capitalism resembles the life of Nate in chemistry."(Gardner, 2010, p. 115).The first difficulty in all academic disciplines is to findand analyze data. Analyzing is the most important process of writing and researching strategies. "To evaluate the system, we conducted a repeated measures controlled experiment that compared the process and outcomes of scientific work completed by twenty pairs of participants." (Olson, 2008, p. 171). Scientific research methodologies and creative research methodologies are important part of research projects for participants. Some of the data cannot be measured by using social methodology. Scale or survey may be used in research project while internet and digital technologies are useful for finding related data.Finding data has openeda new door which is called 'Big Data Terminology'."The term "Big Science" does not discriminate among big, bigger, and the biggest or among ways of measuring size. Size may be indicated by the number of scientists, total size of staff, amounts of money, length of time, or scale of instrumentation." (Olson, 2008, p. 67). Big Data and Big Science terminology have started with the researching of objectives of scientific collaboration. "The research strategy should be regarded as a public document in which an institution states its commitment to

scholarly communication." (Prosser, 2003).Researching is the important part of the academic paper. Research process and research tools are understood by the researcher and participants. Academic researcher must analyze the project requirement and find the size and capabilities. "What is most important in understanding the question of magnitude is that project requirements are not an a priori force that determines project size. A multitude of considerations result in decisions to define project requirements one way rather than another, the collaborators themselves are not always the decision makers, and the position of the decision makers can vary with scientific specialty." (Olson, 2008, p. 71). 21st century researchers find data and participants easier than the last generation. The Internet and collaborative Internet tool is useful for academic staff. "The average number of individual participants in these collaborations was more than 50, ranging from 8 to 150. Not included as individual participants were people who would have performed the same task had the collaboration not been conducting or supporting research." (Olson, 2008, p. 70).Research tools are very changeable for academicresearches and news findings. Scholarly academic communication is an important part of research strategy.

2.8. The Future of Scholarly Communication

The scholarly communication face has changed with digital technology. This changehas started with the Internet. Blogs, Wikis, Facebook, Twitter and other social media tools developed the scholarly communication process. "Social media tools and technologies are built upon the principles and practices of Web 2.0." (Shorley, p. 90).These social media tools have changed with Web 2.0because people give feedback for other people'sreviews."Some of the research in online communities is also relevant to

collaboratories. E-communities, as they are sometimes called, are typically volunteer-staffed bulletin boards mailing lists, wikis, blogs, or other Web sites devoted to a specialized topic." (Olson, 2008, p. 254). E-technology is changing all of the researching process. The process is directly changing and the future of collaboration also changes with this perspective plan. "It analyses the ways in which self-archiving has so far developed, examines the possible benefits and drawbacks of self –archiving, and outlines the potential impact of the practice on scholarly communication." (Gorman, 2005, p. 104). Academicians communicate with each other in order to increase their academic knowledge. The change started with the beginning of industrial revolution and then everything changed immediately. "The standard starting point for coping intellectually with a phenomenon such as Kamioka is the phrase "Big Science" which is more than a label but less than a concept. Since its introduction by Price (1963) and Weinberg (1961, 1967), the term has become a fen of vagueness and ambiguity through overuse." (Olson, 2008, p. 2). Big science terminology started with World War II because the product management process and product manufacturing process changed after World War II. Communication is the first important area for people to use in their daily lives. But the technological development changed the communication tools. "Kaplan and Haenlein classify social media tools on two scales. The first describe the extent to which the tool allows participants to communicate with each other, without intermediation and in real time: tools on this spectrum might range from blogs, which are at the low end can talk to anybody else in real time." (Shorley, p. 90).Social media has changed the communication process and people started to communicate with each other visually and virtually. Social media and the Internet have changed the researching process environment. This imaginary world gave a second life for people to communicate with people virtually. "Most researchers are, at best, infrequent

users of social media: one study found that just 13% of researchers used Web 2.0 tools at least once a week. One important reason for low uptake, found across several studies, is the time that it takes to learn how to use these new tools, and their fragmented and specialized nature." (Shorley, p. 91).The researcher's culture has started to change with the changing communication process. Doctoral studies and academic studies havechanged with socialization process and the changingtechnology. "Connecting these two ideas – disciplinary communities are distinct cultures and one learns to be a disciplinary expert through doctoral study – leads to the conclusion that strategies for socialization must of necessity be different in each field in order to inculcate different habits and skills." (Gardner, 2010, p. 85).

The future of scholarly communication might be in such a way that academicians communicate with others virtually. Reading strategies and reading tools have also changed with digital world. Emotional social responsibilities of people havechanged as well. The new philosophy is digital world and digital exuberancy."Researchers attitudes have not fully kept up with new technologies and online only publications are still rated less highly than print versions in many disciplines. Since social media comprise both a set of tools and an underlying philosophy about how they should be used to facilitate information exchange, we must consider not just whether the tools are adopted, but also whether they have affected the underpinning principles of scholarly communication." (Shorley, p. 91). Scholarly communication process is interdisciplinary and this terminology is useful for 21st century education system. Academic collaboration and interdisciplinary studies are important in the 21st century education and academic systems. Conferences, journals, academic papers and others are important parts of academy."Interdisciplinary scholarship creates unique

connections among academic journals, conferences and associations, requiring researches to create and evaluate their communities as they proceed with their work. Such a commitment is often a detriment for developing interdisciplinary scholars, who can perceive negative consequences for their endeavors because they lack a defined set of disciplinary guideposts in terms of scholarly activities." (Gardner, 2010, p. 104).Collaboration and academic collaboration is important but the next generation will use digital collaboration in their academic communication process. This is the future of scholarly communication in the next generation. Scholarly communication and publication process have changed with digitalization and technological development. Academicians use printed press for their academic studies but academicians whose perspective has changed opened a new door for scholarly publication."Scholarly publication has a very long history and until recently has experienced rather little change. As a one-time biochemist, I used to say that it was strongly conserved during evolution a feature that usually indicates that the function concerned is especially crucial to the survival of the organism. The organism here is the scholarly community." (Gorman, 2005, p. 3).Digital transformation is another important area of scholarly communication. Transformation is everywhere for people using technology in their academic studies. Researcherswere going to the library and researching printed catalog in the early decades of $19^{th}$and 20^{th} centuries. But this process has changed now and researchers, academicians, students are searching libraries from online library catalog. They download the e-book to their computer, and read them by tablet, kindle or any other technologicalreading devices. "The 21 st century, however, will most likely see a transformation of the library's role, not only in the access and storage of scholarly material but also in the creation and distribution of scholarly publishing." (Gorman, 2005, p. 4). Scholarly publishing has spread

out with technology. This new area of scholarly publishing has been affected from scholarly communication. 21st century's new scholarly communication models are based on technological changing. People, who adapted to this changing and using technology innovatively, solve the collaboration problem. They communicate with othersby using virtual media. This virtual media is an important education technology for academicians who scholarly communicate. "Wikipedia's collaborative, anonymous editing process is not recognized by researchers as a trustworthy source of peer review: high profile incidents of gaming, such as Orlando Figes behaviour on Amazon reviews, may have helped to reinforce this view. Publishers experiments with crowd – sourced quality assurance through for example, user comments, have not always been successful." (Shirley, p. 95).People who manage the change adapt themselves to the changes in this technological *global world*. This global world's important part is changing and managing technological development. "Conversation of scientific publications to electronic form began with abstracts and indexes journals in the 1960s. Initially the conversion was undertaken to facilitate the sorting operation that is needed to alphabetize the indexes of these large publications." (Gorman, 2005, p. 4).

2.9. Scholarly Communication and Knowledge Exploration

Change is a part of our lives. Everything is changing fast and directly day by day. "Technological advancement has transformed research across the STEM disciplines, leading to the creation of new fields of enquiry and the growth of novel methodologies and research tools." (Prosser, 2003, p. 52). Collaboration is a part of the academic genius.Academia is the inter-organizational collaboration that grows with academicians. "With the growing recognition that inter-organizational collaborations have grown dramatically in many scientific

fields and industries, scholars have tried to establish generalizations that could be useful for the organization and management of the various forms of collaborations among a set of organizations, often crossing several sectors." (Olson, 2008, p. 217).Making academic research and finding true documents are part of scholarly academic communication. Political situation is a part of academic research. "Before discussing the connection of research strategy to scholarly communication, it is important to take account of the full panoply of institutional strategy and policy mechanism and documentation, in order to understand the purposes and interrelationships of all the elements." (Prosser, 2003, p. 147).Developments in the areas of the internet and technology are changing too many things in the area of education. New Media and digital tools are important parts of education in twenty-first century. "An especially important feature of both Media Art Notation systems is that, through their markup, they aim to preserve not just the content of the texts they encode, but enough information about that content to recreate the experience of using those texts in the future." (Fitzpatrick, 2011).

The new face of scholarly communication usestechnology and digital devices for strategic researching. "Strategies and operational plans provide the vision, end-points and specific actions. Policies should provide the desired behavioral environments: motivating staff to develop appropriate personal contributions. They need to be aligned with the strategic visions in terms of what is permitted, and with the implementation plan in terms of how it is delivered." (Prosser, 2003, p. 147).Academicians use some methodology in scholarly communicating for their research process. Those are institutional type, civic involvement and documentation of service. Research process service is changing with the applications of new technology.

- "Institutional type. Invite faculty who work at different types of institutions to talk about their service role and how it is incorporated into their faculty lie in their particular campus setting.
- Civic involvement. Present topics related to faculty work in the community and the civic mission of higher education.
- Documentation of service. Provide examples of how faculty documents their work. Often faculty has very complex and integrated careers but graduate students see only a glimpse of what it is faculty do." (Gardner, 2010, p. 71)."

Academic research and knowledge search process is changingwith technological development.

Academic Collaboration Process Sample

Scholarly principles of an Education City
"The right to a meaningful education
Uniqueness
Inclusion
Residents participation and activism
Self-expression and self fulfillment
The city as a learning space

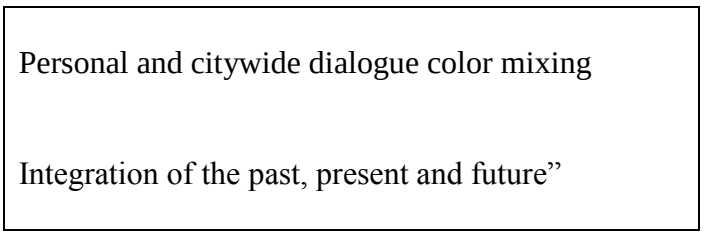


Figure 2. (Dvir, p. 47).

Academic scholarly communication is a part of collaborative study, and understanding the difference between present and future phase is important. Collaboration looks like the personal development in academic area. “Democratic pedagogy turns the uniqueness of each student in the community into a springboard for significant learning. Personal development is attained within the group, simultaneously with commitment to group development and continuous feedback from its members.” (Dvir, p. 68).Personal development is a part of variable characteristics of collaboration. In academic area, gender is a part of the collaborative process. New generation personal characteristics is a part of the collaborative process but ethnicity is not more important than characteristic integration and coordination. “Another area of difference to consider in any discussion of service is how personal characteristics shape involvement in service. Research findings related to different aspects of faculty life indicate that service roles vary depending on variables such as race-ethnicity and gender.” (Gardner, 2010, p. 69)

2.10. Channels for Access to Scholarly Information

Scholarly communication is important part of scholarly information model. Scholarly academic model is based on collaboration for this information success. “Because of the way

the collaboration functioned, different labs were able to work at the same time on the same samples, multiplying their speed and effectiveness."(Surowiecki, 2007, p. 159).Collaboration is the part of researching and finding news in a quick and effective way. Different knowledge is used in collaboration process. This systematic knowledge is interdisciplinary. "Collaboration allows scientists to incorporate many different kinds of knowledge, and to do so in an active way than simply learning the information from a book. Collaboration also makes it easier for scientists to work on interdisciplinary problems which happen to be among today most important and interesting scientific problems." (Surowiecki, 2007, p. 161-162). Collaboration is the part of getting other countries' researchers and academicians together. This collaboration process is international.

2.11. The Future of Scientific Collaboration and Scholarly Communication

2.11.1. Managing Scholarly Information Before the Modern Age

"Social penetration theory will change in the future because of the Internet." (Mc Carthy, 2009, p. 18). Theinternet is the twenty first century's social phenomenon. That information is giving more penetration to people for their academic sharing. In the early decades of nineteenth century, people used to share news in printed material. Printing materials opened a new door for academic review sharing."Reference books also offer a new angle from which to consider the impact of printing in early modern Europe. Since its beginnings as a subfield in the 1980s the history of the book has generated much new work on the impact of printing and the notion of "print culture". Culture has changed with technological development and printing culture has changed with technological development, too. Printed books are the important part of industrialization. Some sectors are overtaken about

printing by industrialization. “Elizabeth Eisenstein has made the most extensive claims for the impact of printing, emphasizing the cumulative improvement across successive editions and the rapid and broad diffusion of books.” (Blair, 2010, p. 8).Books are used in different fields of studies as compared to others.When compared to nineteenth century books, the future of book is different now andindustrial development has changed as well. Offline world usually reads the books but nobody knows who read or liked it. But now habits have changed and everybody sharetheir knowledge. Anticipation of future interaction both in the on and off-line world represents external influences which alters the way in which individuals present themselves to another, or in the case of Facebook, a community. (Mc Carthy, 2009, p. 18). Important data is shared with others and their sharing is shared with others, too. This kind of information is called “spider web”. Information is changed day by day. Every knowledge changes with new data and knowledge. “Historians have pointed especially to three main sources of information explosion in the Renaissance: the discovery of new worlds, the recovery of ancient texts, and the proliferation of printed books.” (Blair, 2010). Books have always represented trustful information to people. But renaissance wasthe changing face of printed media. People were writing the books with their hand writing. But printed machinery is very useful to copy too much text. Gutenberg found the printing machinery and everything changed because writing and sharing the book was the industrial culture for this period.“For a time historians spoke of a “reading revolution” in eighteenth-century Europe, a rapid shift from a predominantly intensive reading focused on a careful and repetitive reading of a small number of texts that carried authority, to extensive reading that involved skimming and browsing through a much larger quantity and range of material.” (Blair, 2010, p. 59). Transformation process is everywhere.The era of social transformation is about the reading culture, and it has

changedwith printing machinery. Reading culture has changed with the invention of printing machinery.This transformation is the final of hand writing culture.“This leads to the second area on media regulation: regulation for enrichment of the social, political and cultural spheres, or more succinctly, societal regulation.” (Siochru, 2002, p. 6).Changing of regulation may sometimes be political or cultural. These are the particularly changing perspectives of technological development. Human oriented technology has been converted to machinery-oriented technology. Printed and digital culture caused social and cultural change in the world. The most important change has occurred in the area of accessibility.

2.11.2. Interpersonal Relation with Social Penetration

Socialization is an important part of our daily routine. Everyone communicates with each other and this process sometimes occurs in face to face and sometimes in digital media. Digital regeneration has occurred with the Internet. “The term Social Penetration Theory was formulated by psychology professors Irwin Altman and Dalmas Taylor in 1973, to describe the dynamics of relational closeness. Relational closeness can progress from superficial to intimate. Social penetration theory explains why relationships are formed, why they end, and the process that they must go through to prosper.” (Mc Carthy, 2009, p. 6). Communication is an important part of daily routine and it expands to others. “Social Penetration Theory asserts that as relationships develop personal communication from superficial to deeply personal topics, slowing penetrating the communicators' public personal to reach their core personality or sense of self.” (2016). Academic communication progress goes on by social penetration.Academicianswho scholarly communicate with each other depends on knowledge sharing.Social Penetration Theory (called a “stage theory” by Mongeau &Henningsen, 2008),

has enjoyed widespread acceptance by a number of scholars in the communication discipline." (West, 2010, p. 169).Communication discipline uses academic area to penetrate into other academician's network. Academic social act is part of daily routine. Social rapprochement is part of daily social life but in the academic area academicians use social rapprochement for their academic scholarly communication. "First viewed as a direct, continuous penetration from public person to private person, social penetration is now considered to be a cyclical and dialectical one. Relationships have normal ebbs and flows. They do not automatically get better and better where the participants learn more and more about each other. Instead, the participants have to work through the tensions of the relationship (the dialectic) while they learn and group themselves in parties and in relationships. At times the relationships is very open and sharing." (2016). Participant relation is another part ofcommunication process. Academic participants work together for some projects or academic researches. Their communication needs has very much effect on their scholarly communication process.Common works include some of academic researchers at most universities. Academicians having good communication and relationships have a good scholarly communication process as well. "Part of the reason for the theory's appeal is its straightforward approach to relationship development. Although we alluded to some assumptions earlier, we will explore the following assumptions that guide SPT:

- Relationship progress from no intimate to intimate.
- Relational development is generally systematic and predictable.
- Relational development includes depenetration and dissolution.
- Self-disclosure is at the core of relationship development." (West, 2010, p. 169).

People will be motivated when they connect to each other to communicate and have good relations for their academic development. Social penetration includes cultural things for people to understand each other. Sometimes understanding other ideas is an important part of people's behavior for using or searching new knowledge processes. The researcher who wants to find new knowledge should have wide vision to make a good relationship with others. "Other time, one or both parties to the relationship need their space, or have other concerns, and the relationship is less open. The theory posits that these cycles occur throughout the life of the relationship as the persons try to balance their needs for privacy and open relationship." (2016).Social and knowledge reciprocity is a part of academic study. Sometimes people communicate with others to understand their economic terms."A social exchange theorist examining Meredith and LaTasha's relationship would predict that it might be heading for some trouble because the relationship currently seems to be costing the two more than it is rewarding them; Social Exchange Theory is based on the notion that people think about their relationship in economic terms." (West, 2010, p. 186).Academic area is a social platform and academicians use social penetration within researches, thesis, books, articles and other academic works because the academic area is developing at all times and academicians must find new knowledge whichis shaped up with sharing and communicating. "The second theoretical approach used to explain this disclosure-liking relation stems from information-processing modelsof attraction, which suggest that liking is determined by havingpositive beliefs about an individual; the more favorable the beliefs, the greater the attraction." (Collins, Miller, 1994, p. 458-459).

2.11.3. Relativity of Technology

The reality ofTechnologyis a relativecondition.Information and knowledge production process have changed over the years by new technological inventions.Thischange and transformationis indeedknowledgeof evolution.“Information is costly to produce but cheap to reproduce. Books that cost hundreds of thousands of dollars to produce can be printed and bound for a dollar or two. 100-million dollar movies can be copied on videotape for a few cents.” (Shapiro, 1999). Knowledge isnotacommodity that is easily produced and easily accessible. Today'stechnologyhas made itaccessible in a simple way.Theneedforaccess toacademicinformationis academic communication.“Plato’s famous critique of writing offers an early example of the ambivalence that has often accompanied the adoption of a new technology. As the practice of writing spread in fourth- century Athens, Plato used writing to articulate the fear that written words, in circulating beyond the author’s control, were more readily misunderstood and misused than spoken to an interlocutor.”(Blair, 2010).Technologyhas provideda lot ofopportunities to humanity and the same technologyfacilitatespeople's lives. Theresult of jointworkof scientistsis emergingbreakthroughs.Changes in technology, innovation and a lot of people sharing common things are the results of research and study. “Thirty-nine scholars worked over four years, first to collect the sources, often fragmentary, then to select and summarize what they found of value, eliminating repetition and contradictions and arranging the selections systematically.” (Blair, 2010, 20).Collective works on the basis of information produced scholarly communication. Technological change has completely changed the face of scholarly communication. Communication with other academics has become a lot easier. Collectively work can be easier with social media. Studies in social sciences, especially social media have become a great opportunity. “Economists say that production of good information involves high fixed costs but low marginal costs.”

(Shapiro, 1999).Fullaccess to informationonthe resultsprocesshas beenshortened. The time of finding the information has decreased.Increasedinformationsharing made productioncost and information reaching times decrease.However, secure access to accurate information in this regard has emerged as problematic. The people who want to find data or information used to search it from encyclopedias or reference books but now this process has changed too.“One of the most distinctive features associated with the organization of knowledge in the early modern period was the branching diagram, which featured especially in pedagogical works but also in some reference works.” (Blair, 2010).Access to information, knowledge discovery and knowledge sharing processes are affected by the technology. This influence brings social economic growth with it.

“The economic rationale, which is associated with network and interactive services, is based on the idea that the utility of the network as a whole grows with the addition of each new member.” (Siochru, 2002, p. 6).Social networks are also experiencing economic growth increases by the increasing number of people in social networks. The growth of new people and new ideas are emerging with the new shares.

“To see why information commodity markets don’t work, let’s examine the history of CD phone book.” (Shapiro, 1999, p. 23).This whole process has taken an important issue in the state of the knowledge economy as a result. In addition, knowledge of people is increasing as a result of sharing their knowledge with each other. “The Encyclopedia Britannica has been regarded as a classic reference work for more than two hundred years. And, as a classic, it has commanded a premium price: a few years ago a hardback set of the thirty- two volumes of the Britannica cost 1,600 dollars.” (Shapiro, 1999, p. 19). Encyclopedias were the most valuable

information on the network but for the moment they are provided by the online encyclopedia databases on the Internet. The transformation and exchange of information are associated with technological change.

2.11.4. New Media

Change is a very important part of the 21st century.Everything is changing day by day. "In china and Japan, printing had been practiced for a long time from the eighth century, if not before but the method generally used was what is known as block printing the carved woodblock being used to print a single page of specific text." (Briggs, 2002, p. 15).The processstarted with the printing machineinvention. The main reason forthe changewas thetechnological equipment. The used materialsand methods were changed. Sciencechanged the waysto access information over the centuries. Change is inevitableinthe academic field butinformationproduction has been changedaccordingto modes.Change andtransformationalso resultin the change in theprinting and publishingprocesses."Scholars or more generally anyone in search of knowledge had other problems. Let us look from this point of view at the so-called information explosion, a metaphor uncomfortably reminiscent of gunpowder which followed the invention of printing. The most serious problems were those of information retrieval and linked to this, the selection and criticism of books and authors. There was a need for new methods of information management, just as there is today, in the early days of the Internet." (Briggs, 2002, p. 18).Technologyhas facilitatedtransportation.Booksareeasytotransportso thatpeople indifferent countriesread the samebook."Changes in the media system also need to be related to changes in the transportation system, the movement of goods and people in space whether by land or water.

The communication of messages is, or at any rate was, part of the system of physical communication." (Briggs, 2002, p. 23).21st century media has undergonechange.In 100years,mediahas reneweditself indifferent ways.The media has increased its knowledgeinshapingtechnology."During the past 100 years, the media have been transformed into one of modern society's most important institutions, exercising, influence in virtually all aspects of social and political life, assuming a central role in the shaping of culture, and becoming one of the primary ways by which people learn about and interact with their world and between each other." (Siochru, 2002, p. 25).World Wide Web as one ofthe greatest technologicalinnovations has undergonechanges in webpublishing andacademic fields."By then ecology of a World Wide Web (www) had been transformed, not from a United States base, but from Cern, a European particle physics research institute, nesting under mountains in Switzerland, where an Englishman, Tim Berners-Lee, devised what he called the 'world wide web' in 1989. Suppose I could programme my computer to create a space in which anything could be linked to anything he speculated." (Briggs, 2002, p. 309).Median change began with the radio. He moved to television media with a visual dimension. New media and interactive media concept emerged with the Internet. The audience was not just the audience but also the performers. Social media audiencesbrought themselves to a reporter position now."As the century wore on, the pace of change accelerated. Radio was around for thirty-eight years before 50 million radio listeners could tune in. Television achieved the same number of users in fourteen years. For years after the privatization of the U.S. backbone in 1994, widely regarded as the moment the Internet became a public network, 50 million people were online. By the end of 2000 this number had risen to an estimated 400 million, with growth estimates exceeding 100 percent per year. As an indicator of the growth of new multimedia,

RealNetworks, the company that makes the most popular consumer software for streaming radio and video over the Internet, claimed 200 million unique registered users five years later." (Siochru, 2002, p. 25). New media is important incommunication and changing social media. "Communications, as the American political scientist Karl Deutsch puts it, are the nerves of government, especially important in large states above all in far-flung empires." (Briggs, 2002, p. 24).Social media has changed the content production process. The industrial revolution has changed the production of artistic products and social media facilitate the spread of this process."According to the German Marxist critic Walter Benjamin (1892-1940), the work of art changed its character following the Industrial Revolution. That which withers in the age mechanical reproduction is the aura of the work of art. The machine substitutes a plurality of copies for unique existence and in so doing produces a shift from the cult value of the image to its exhibition value. Whether or not the aura of the image is lost is a difficult hypothesis to test, and it might even be argued that familiarity with a reproduction sharpens rather than sates the desire to see the original." (Briggs, 2002, p. 39).Emergence of new mediais based on technology. Exchange of information is generated by the technology of producing and has changed itspenetration path. New media has created a difference in its academic communication process."Among the social and cultural factors supporting technological development in Japan the Japanese surveys concluded a society based on equality and specialized technology in small and medium sized companies." (Briggs, 2002, p. 285). At first, all people used cable channels.Later this process changed and people used wireless for their communication processes."The first real excitement of cable television came with the recognition that it could offer a greater number of channels (at first usually twelve, eventually up to 100 or more) than their waves." (Briggs, 2002, p. 296). All of this wasnamedas

technological revolution, and this process started with industrial revolution. “Now, many people on both sides of the Atlantic believed that it would be the vanguard of a technological revolution, the nervous system of an information-centered society.” (Briggs, 2002, p. 299).New communication processes have been created as a result of the start of the new media and the change in academic communication.“A third cultural institution that has been charged with questionable ethics is higher education. College and universities across the United States teach introductory courses in ethics, and these are required courses in many schools.” (West 2010, p. 19).Although thecommunication processhas evolved, newmediahas created a newcommunication network.

Changes in the communication means have been accelerated with the emergence of the Internet.“As the Internet evolves through successive reconfigurations, driven by shifting dynamics and embracing new sets of users, its regulation and governing entities have diversified.” (Siochru, 2002, p. 99). This process is changeable in time perspective. Internet is changing the dynamics of people and settingnew userson communication process. “Katherine Miller underscores this dilemma, stating that “conceptualization of communication has been abundant and have changed substantially over the years. Sarah Trenholm notes that although study of communication has been around for centuries, it does not mean communication is well understood. In fact, Trenholm proactively illustrates the dilemma when defining the term.” (West 2010, p. 4).The communication of individualsis an importantfactor and the internetandcommunicationtechnology have facilitatedthis processes.“Communication is a social process in which individuals employ symbols to establish and interpret meaning in their environment. We necessarily draw in elements of mediated communication as well in our

discussion, given the important role that communication technology plays in contemporary society." (West 2010, 5).Highcultural levelof the individual's incontemporarysocietyconcepthas gained importanceinthe communication process. It is situatedindigital communicationsandcommunicationtechnology."It is sometimes claimed that the invention of the printing press did not alter the fundamentally oral nature of European Culture." (Briggs, 2002, p. 27). Communication is the changing process by technology or time. Communication is not a only social process. Time has changed online technology and online communication tools. People talk toeach other and communicate with each other using face to face online technology; ex: Msn messenger, face time, Facebook, Skype and other networks."First, we believe that communication is social process. When interpreting communication as social, we mean to suggest that it involves people and interactions, whether face to face or online." (West 2010, p. 5). People communicate with each other by using interactive tools. Internet and social media is changing this skills. Interactive tools are not useful insocial media's communication process for users.

2.11.5. Education Technology

"From the mid-17th century to the closing years of the 18th century, new social, economic, and intellectual forces steadily quickened—forces that in the late 18th and the 19th centuries would weaken and, in many cases, end the old aristocratic absolutism. The European expansion to new worlds overseas had stimulated commercial rivalry. The new trade had increased national wealth and encouraged a sharp rise in the numbers and influence of the middle classes. These social and economic transformations—joined with technological changes involving the steam engine and the factory system—together." (Riche & others,

2015).Education is the area of understanding the development of people's knowledge andtheir information process. Education system has changed with technology.Education technology and education technology material have been systematically changedin21st century. In the early decades of 19th century,education means started to change."How effective has online learning been in improving (for at least maintaining) learning outcomes achieved by various populations of students in various setting? Unfortunately no one real knows the answer to either question on the important follow on query about cost savings. There have been literally thousands of studies of online learning." (Bowen, 2013). Education system has changed with online education system that is why global education means equaleducation for all. Lifelong learning program has started with online education tools. American education system uses too much education materials with their curriculum. 21st century education system's important part is education technology. Some of them are Ipad, projection machine, kindle, computer, social media and other useful education technology materials."One important value you glean from studying communication theory relates to your critical thinking skills." (West 2010, p. 22). Critical thinking skills have started with reading culture and writing culture.E-books are the other important part of our lives for gaining critical thinking skills. Some of the universities have online education programs. These are graduate or bachelor degree programs."At one end of this highly variegated landscape is an extremely large number of relatively straightforward online courses that provide an assortment of instructional materials on the web, often including videos, practice problems, and homework asignments." (Bowen, 2013). People find online education certificate programs and PhD programs in other countries very easily by using the internet."A meaningful education enables the individual to grow, develop and give expression to his or her personality, as presented in the previous principle. A

meaningful education, which includes meaningful learning, is one of the rights of the young person and the citizen of a modern city." (Dvir, p. 46).Interactive education is animportant part of the education system. Some of the countries do not have specific programs at their universities.The people who want to specializein the fieldof area are able tochooseonline educationprograms –"Digital and face to face dynamics and interrelations" (Kent, 2014, p. 28). Those programs give a chance to peoplein communicating with the expert persons for their area in other countries.

3. CONCEPTUAL ANALYSIS

"Graduate education in the United State has clearly undergone significant changes since its inception in 1876; however the old adage still pertains. Berelson (1960) commented, "The graduate school has always been accused of abnormal resistance to change by those who had a reform to introduce". Graduate education has changed its structure insofar as eliminating certain program requirements and the changing demographics of its students, but it still remains an institution focused on producing knowledge and research." (Gardner, 2010, p. 17). Researching and analyzing methodology is the important part of academic research. Classification of data is an important part of analyzing methodology. "Ivan Chompalov and Wesley Shrum developed a larger-scale classification scheme based on data from phase one of the American Institute of Physics Study of Multi-Institutional Collaborations." (Olson, 2008, p. 55). Technology is integrated into all areas in the world. E-technological development is a changeable perspective for the 21st century system. E-Science is a new term.Technological innovation has started with the Internet."We use the term e-Science to represent this next generation of scientific problems, and the collaborative tools and technologies that will be

required to solve them. These next generation e-Science problems range from the simulation of complex engineering and biological systems to research in bioinformatics, proteomics, and pharmacogenetics." (Olson, 2008, p. 7).E-science and E-science technology is the most popular part of cultural thingsand computer technology. "The public discourse about electronic publishing, as heard at scholarly and library gathering on the topic of scholarly communications, has changed little over the past several years. Librarians and academics fret about the serials crisis, argue about the influence of commercial offshore publishers." (Ekman, 1999, p. 53). Electronic libraries are an important part of E-science technology. They are easily accessible for academicians. With E-science technology, the faces of libraries and librarians have changed as well. "The notion of cyberscience does not encompass all aspects having to do with the use of electronic means." (Olson, 2008, p. 35).All technological developments, which are integrated for scholarly communication, are useful for academicians and academic research. Academic research has started with the printed media but now academicians use digital research tools and cyberscience methods. Other technological developments are online education and online conference."E-conferencing, with or without video transmission, is still unusual in all disciplines. Except for some researchers from subfields in medicine, physics, sociology, and history, interviewees reported only experimenting with e-conferencing." (Olson, 2008, p. 37). Academicians are taking online educations, online certificates and learning in order to be feed in their research area. E-conferencing is useful for the communication between academic staff who live in different countries. This is a useful tool of social network across academicians. Academician's social management tools process is going well with the help of e-science and cyberscience. Social networking has changed the academic environment for academic staff. They communicate

with each other very easily.“The function of social management comprises of instruments of institutional or associational social management: participants get socialized in the group, paper givers are being initiated, and seminars may even serve as a way for students to learn how to behave in the academic environment.” (Olson, 2008, p. 40-41). Transformation and evaluation is an important part of this century. Electronic devices and digital technology transformation are part of higher education. Academicians usethose technological transformation for their researches and they find new data. In order to understandthe professional development of those people, we should first understand the way of research used by those people.“This type of project’s main goal is to increase the knowledge of the participants, but not necessarily to conduct original research. This usually involves formal education- that is, education by a degree granting institution but can also consist of in-service training or professional development.” (Olson, 2008, p. 63). Academic staff and researchers use the Internet, Facebook, Twitter, Wikis and other digital resources for their professional development. Researching tools are changing with the Internet and digital technologies. “Tools such as blogs, wikis, Twitter and Facebook, as well as their underpinning principles such as crowdsourcing and the value of enlaced or networked data, have all been explored to varying extends by academics, librarians and publishers in their attempts to improve the efficiency of scholarly communications and to reach new or wider audiences” (Shorley, p. 7). Scholarly project based of research activities. “Research activities most often consist of papers and reports, patents and agreements as indicators of trends and processes.” (Olson, 2008, p. 7). Integrated digital communication process to research methodologies are used within scholarly communication tools. “Researchers must publish their work mainly in books and scholarly journals in order to build their academic careers; and researchers do not regard social media as

a wholesale replacement for those channels. Researchers in some disciplines, philosophy, for example publish early drafts of their work using social media tools such as blogs, seeking comments from their peers. But such behavior continues the tradition of circulating working papers and pre-prints, rather than being a new behavior stimulated by social media." (Shorley, , 94). Academic collaboration tools are independent and different depending on academician vision."Without interdependence there is no reason to form a collaboration. Without autonomy there is no reason to join one." (Olson, 2008, p. 79). Collaboration means joining one another. Cultural differenceis not important for the users of digital technology. Collaboration tools of using digital technologies are a part of interdisciplinary studies. "Scientists themselves are keenly aware of the crucial role of machines for extending knowledge in their respective fields, but the interdependencies configured around and by technology shape collaborations in other ways as well." (Olson, 2008, p. 79). All these change the academic perspective of scholarly communication. Scholarly communication process continues in an interdependent way."Social media and scholarly communications: the more they change, the more they stay the same?" (Shorley, p. 7).Establishment and development of new technologies change the perspectives of academic communication,especially digital technology used in scholarly academic area. Using the machine in communication process is very new to the people. "The most obvious significance of technology in scientific collaborations is the degree to which they are focused on instrumentation proper – the machine is the reason for the collaboration. If there is a conventional view of the role of technology in science, it is that new instruments are developed for much the same reason that motivates a company to develop a faster computer: competitive advantage. A participant in a telescope-building collaboration made the point especially well." (Olson, 2008, p. 121).

3.1. Communication

"Animals have their own methods of communication. For example Dolphins use sound to communicate with other dolphins and to echolocate when hunting. From the early history of human existence there have been many ways of communicating each other. People from different parts of the world use a variety of languages to express their thoughts. Gradually, civilization thrived and ways of communicating with other continents became a general need to build up political and economical inter-relationships among them." (http://www.christiealwis.com/Books/PCM/History.pdf). Communication history is a term with very long history in the world. Peoples are always part of some communities and they always communicate with each other. Language is a part of communication but sometimes people communicate with each other using body language. Communication continues all the time albeit in different processes. Communication and science are processes that continue one within the other. Communication develops together with language. "The rapid progress in science and methodology and in the means of communication all require strict rules and a more rapid standardization of the language." (Sonneveld, 1993). The science of methodology in communication process is changeable. Some of the communication tools are more standard.

“The era of industrialization put more emphasis on the necessity of communication between different countries. This resulted in the first efforts in the field of terminology and in particular, the standardization of technical terminology and regulation of scientific terminology.” (Sonneveld, 1993). Communication process has changed with industrialization process. Some of the terminology of the concept has changed with this process.

"Although the concept of development communication has been with us for a long time, recognition of its importance for sociocultural, economic, and political development, and

utilization of its approaches and methods did not gain public and academic acceptance until the early 1960s. Its development, problems, and potentials, outlined and critically examined in this text, reflect the thorny road it has traveled. It has been subjected to intellectual skepticism and public doubts and has been misinterpreted and misapplied, recently, questions of its relevance to developed societies have been raised. The place of communication in the development process was given a boost when Lerner (1958) wrote his famous treatise, The Passing of the Traditional Society, in which he acknowledged that mass media growth was one of the three phases of democratic political development." (Moemeka, 2000).Communication starts with communicating with each other, using body language or talking process. Cultural changing is affected by the communication process. Political environment, sociocultural things and other things are changed by this process too. Academic area always researches the changing perspectives of communication process."The aims of the study were to develop a stage model of the effects of this experiment in order to implement this method with other communication media and provide a guide that others could follow." (McPhail, 2009). Cultural changing has affected the communication process but the other important thing is technological development. Technology is an important part of communication and communication is an important part of communication process."UNESCO's Communication and Information Sector (CI) was established in its present form in 1990 and promotes the free ideas by word and image. The sector provides the secretariats for two intergovernmental programmes: the International Programme for the Development of Communication (IPDC) and the Information for All Programme (IFAP). The benefits of knowledge and technology are not available to the large majority of the world's population. The main objective for UNESCO is to build a knowledge society based on the

sharing of knowledge and incorporating all the socio-cultural and ethical dimensions of sustainable development."(McPhail, 2009).

3.2. Technology

Technology is a part of all people in daily life routine. Technological changing and development are everywhere in people's daily life routines. Communication area is affected by this communication process. Innovation and technology are an important part of 21st century. "The report responded to the imperative to develop an integrated and collaborative approach to management of key issues facing the built environment design professions in the world. The following six issues were identified as being critical to the professions' future development: 1 Sustainability 2 Procurement 3 Innovation and technology 4 Industry capacity 5 Exports 6 Knowledge and training." (Peter, 2009). The first era of the conceptual framework of technology is thinking creatively, understanding the new technology and finding new innovative projects. Everyday new technology is integrated into the technological area. Everyday new technology is integrated the technological area. "The integrated BIM technology must be developed to a platform which can efficiently support the new processes and communication between the project shareholders, including also the surrounding community. The key development themes are information creation (software tools, product libraries) and interoperable platforms (data standards, ontologies, interfaces, model servers)." (Peter, 2009). Technology is changing every part of people's daily lives. The main area of technological change starts with the understanding of creative strategy and innovation process. The important part of technology is; "The main conclusions are that the technology is

applicable, but the business implications must be identified and quantified with reasonable accuracy before it can be deployed on a wide scale." (Peter, 2009).

"Transfer of technology is a major subject in the history of technology. Modern societies have been constructed in many different ways, and in such periods transfer of knowledge and technology has played an important role. Nevertheless, the historiography of technology, just as the historiography of science, has been dominated by creativity more than by transfer. This priority has left contemporary Spanish contributions in a subordinate position. In recent decades, the historiography of technology has changed its focus. Several factors are involved, but perhaps the economic relevance of technology has directed interest towards the actual role of technology in society, whether or not it is traditional or new, and whether or not it is generated within the same country or transferred from elsewhere." (Inkster, 2010).

Technology expresses a period that has advanced in long processes. Since the times of primitive man, people have been in many works and purposes for the technology to develop. One of the most important points in this process is the technological tools that people create in order to develop their skills. Technology develops together with cultural processes. Technology is advancing further with people producing products together. Communication technologies have emerged with the development of technology. Telegram, telephone, radio: all these indicate the steps that humanity has gone in the field of communication technologies.

"The history of humans and technology is a long one, going back millions of years to the use of stones as tools and to their fashioning into more efficient devices through skillful flaking. Ancient peoples discovered the use of fire as a survival technology, only much later devising

increasingly complicated systems of water management for irrigation and later still for hydroelectric power and many other uses. As communications technology developed closer to our own times, it brought people into greater contact and made them more knowledgeable and cosmopolitan. Medical and agricultural technology improved life expectancy, especially in our modern era; artificial organs could replace dying ones, and chemical and nuclear medicines could stop diseases such as cancers in their tracks." (Headrick, 2009).

The technological products that people produce and develop underlie the technological changes that develop together with communication processes. Technology is a constantly changing field. Development of technology is a process that has been continuing for many centuries. At the beginning, the expression ‘communication technology’ brought only telegram and wired telephones to minds, however after 2000s, this process has completely changed with the Internet and wireless internet.

"The most extraordinary expression of Neolithic technology is the construction of megaliths, or huge stone monuments. Neolithic people erected monuments in many places, from Western Europe to Easter Island in the Pacific. The earliest were the temples of Malta, built 6,000 years ago. Most astonishing of all, however, is the great stone circle at Stonehenge in England. The largest stones weigh between 25 and 50 tons each and were transported 25 miles overland. Eighty-two blue stones weighing five tons apiece were brought from 150 miles away, partly on rafts. " (Headrick, 2009).

3.3. Creative Destruction and Disruptive Innovation

Creativity processes cause change in many fields. Many institutions made progress in production and technological renewal together with the tracking of the creativity and development processes.

"The creative destruction borrows Schumpeter's colorful language to signal the specific focus within the broader field of entrepreneurship that will be highlighted by perspectives from organization theory and throughout our book: the emergence of new industries. The good news is that recent research, including the studies reported in the remaining chapters of this book, has made important progress in developing the application of frameworks from organization theory to study the issue of the emergence of new industries." (Mezias, Boyle, 2002). With the emergence of organizational changes and works, the concepts of creative class have arisen. Production and developing production R&D processes have arisen as well. All these processes have revealed new industrial processes.

"Globalized culture illustrates Joseph Schumpeter's metaphor of capitalist production as a gale of "creative destruction." Cultural growth, like economic development, rarely is a steady advance on all fronts at once. While some sectors expand with extreme rapidity, others shrink and wither away." (Cowen, 2002).

Creative destruction processes reveal the fact that it increases the market share of the changes due to innovation on the basis of products. Cultural changes bring changes in producing power.

"In response to commonly pessimistic attitudes, I will outline a more optimistic and more cosmopolitan view of cross-cultural exchange. The “creative destruction” of the market is, in surprising ways, artistic in the most literal sense. It creates a plethora of innovative and high-quality creations in many different genres, styles, and media. Furthermore, the evidence strongly suggests that cross-cultural exchange expands the menu of choice, at least provided that trade and markets are allowed to flourish." (Cowen, 2002).

Innovation exhibits a process that constantly progresses and changes. Researching is an important step in being an entrepreneur and generating innovation. At this point, it is possible to observe the fact that the concept of creative destruction is directly connected with the concept of scholarly communication.

"Innovation and entrepreneurship are discussed under three main headings: The Practice of Innovation, The Practice of Entrepreneurship, and Entrepreneurial Strategies. Each of these is an “aspect” of innovation and entrepreneurship rather than a stage." (Drucker, 2006).

As a result of the academic production processes working together with the sector, the academia and production exited from a period when these two were distant from each other. It is known that communication is important in every field. Communication has become easier with the development of innovation generating technology which is the advanced stage of production.

"The results of these simple innovations have been startling. Freighter traffic in the last thirty years has increased up to fivefold. Costs, overall, are down by 60 percent. Port time has been cut by three-quarters in many cases, and with it congestion and pilferage."(Drucker, 2006).

3.4. Scholarly Communication

"It is easier for more productive which generally means better known scholars to collaborate internationally."(Surowiecki, 2007, p. 163).Academicians and scholar collaborators use scholarly perspectivesbetween each other. Academicians and scholars communicate with each other directly by using digital collaboration as well.

"Users can now access scholarly information resources through a number of documentary forms and channels such as:

- Full text of journals printed as well as electronic through the publisher, such as Emerald, or through service providers, such as Ingenta
- E-journals and e-books usually through the publisher's website or through services such as subject gateways
- Digital libraries- general or institutional – websites of specific digital libraries such as the California digital library, American Computing Machinery digital library, New Zeland Digital Library and National Science Digital Library." (Gorman, 2005, p. 78).

Digital literacy is an important part of the digital culture of scholarly communication and scholarly information. E-books, digital libraries, full text journal and all textsare useful for collaboration. "One of the more intriguing aspects of scientific collaboration is that the more productive and better known a scientist is, the more frequently he or she works with others." (Surowiecki, 2007, p. 162).Academicians are sharing information and knowledge for communicating with other scientists and academicians. "At this time, scientists are driven by

two motives to publish; they want to communicate their discoveries and share knowledge, but they also want to be intellectual claiming their discoveries and insights, so registering intellectual priority." (Gorman, 2005, p. 99).Sharing something is part of the scholarly communication area. Knowledge is transferred from one person to the other. "The introduction of the internet in the 1990s brought a number of changes to the way that the literature is accessed and used. Firstly, in many cases it has accelerated the transfer of knowledge." (Gorman, 2005, p. 100). Knowledge finding and transferring it to others is very easy for the Internet user."The rise of the internet and new digital publishing technology give us the opportunity to examine carefully what it is that libraries, researchers and scholars require of a scholarly communications system." (Gorman, 2005, p. 101). Digital scholars are using education technology to communicate with other academicians. Libraries are important part of the changing technology. Education technology has changed the face of libraries and they are converted to digital libraries. Scholarly communicating academician is an important part of digital library user. "ARL members founded SPARC in 1998 in order to change scholarly communication's status quo. This was followed in 2002 with the launch of SPARC Europe to further the agenda of SPARC in Europe. Today, SPARC is an alliance of universities, research libraries and organizations that responds constructively to market dysfunctions in the scholarly communication system." (Gorman, 2005, p. 102). Digital environment is changing the academic research area rapidly. Finding and using information ofacademicians, academic research and academic paper perspectives are changing. "Exploring the economics of the creation, production and distribution of scholarly and scientific content in the print era reveals a good deal about the impact of the incentive structure on authors, and how it combined with economic characteristics of information to shape a crisis in scholarly communication."

(Gorman, 2005, p. 166). Printed material is not useful for academic researches. Digital material is easier to use than printed material. Economic side of digital material is found more acceptable than printed material. Researchers find new knowledge from other countries' digital libraries or databases. "The digitization of content and online distribution and access accentuate and sometimes change the economic characteristics of information." (Gorman, 2005, p. 171).

Doctoral education students must be part of the quantitative and qualitative analyzing methods. "Synthesizing and focusing on the socialization processes that occur in doctoral education, the volume also opens the door for new theoretical perspectives to explain and guide the process as well as creative strategies for enhancing the effectiveness of doctoral education." (Gardner, 2010, p. 11). Academic collaboration socialize people because they communicate more with others for their thesis or research. "Other literature on innovation through inter-firm collaboration draws heavily on theories of inter-organizational relations. However, it suffers from a proliferation of approaches and a multitude of uses of core concepts. Aldrich and Whetten tried to rescue the concept of inter-organizational networks from a purely metaphorical use by suggesting a theoretical distinction between three kinds of collective entities." (Olson, 2008, p. 218).Collaboration is important in understanding the motivation and network process for the academic research and academic environment. Academic environment will be changed with scholarly communication tools. Academic researchesmay create modernity in the world. "A reoccurring topic of study in doctoral education focuses on the student experience overall. Through understanding the pathways to, through, and from the doctoral experience, scholars have hoped to assist in the recruitment,

retention, and graduation of doctoral students. In the quest to describe the doctoral student experience, scholars have utilized many different approaches and frameworks; however, more than any other, socialization has become the common theoretical lens through which to better understand the complexity of the doctoral student experience." (Gardner, 2010, p. 5). After the World War II, the research process content has changed. The first step of this process is innovation and second of it is technological development. "Modern societies depend on knowledge as human capital, as a component of and a constraint on government policy, and as a source of technological innovation. Since World War II, the financial requirements, risk, and visibility of many research endeavors, have generated public controversy and political debate." (Olson, 2008, p. 35). After World War II, academicians' social area and area of interest have changed. Doctoral research process and subject area have changed, too. Golde and Dore reported results from a survey of 4,114 doctoral students in arts and sciences disciplines. Disciplinary comparisons were presented for students in English and chemistry. Data on preparation for research were presented on those respondents indicating an interest in ever becoming a faculty member. (Gardner, 2010, p. 49).

Scholarly communication is a part of doing research and writing scientific academic papers together. Doing something togetherfor some time is very difficult. The important part of research process is planning and understanding the knowledgeable data."Scientific knowledge is accorded the highest status among various forms of knowledge, and it is important to understand developments such as the increasing prominence of collaborations in as much detail but also as much generality as possible." (Olson, 2008, p. 195).

Doctorate is the important part of the academic process and academic research. “The first doctorate was awarded by Yale in 1861. Then, John Hopkins University opened in 1876 pioneering research-oriented Ph.D. degrees in the arts and sciences, supporting students with fellowships”. (Gardner, 2010, p. 11).Scholarly communication's important part is academic research and doctorate's important part is also academic research. The first doctorate study of scholarly communication is useful for the academician. “A major premise in the technical underpinnings of the new consortia model is that a relatively inexpensive scanner can be located in the academic libraries consortium members. After evaluating virtually every scanning device on the market, including some in laboratories under development, we concluded that the 400 dot-per-inch scanner from Minolta was fully adequate for the purpose of scanning all the hundreds of chemical sciences journals in which we were interested.” (Ekman, 1999, p. 279). Scientific collaboration of scientific journal users may be within scholarly communication area for their research process. “To acknowledge that scholarship of many different varieties is taking place online, and to evaluate that scholarship without media-related bias.” (Fitzpatrick, 2011, p. 22).Scholarly communication is the knowledge process of peopleto understand the systematic process in their academic research. Academic research is the collaboration process of usingfuture digital communication tools. “The issue of peer review’s future has nonetheless been taken up in various forms by a number of recent publishing experiments. One such experiment is arXiv, an open access e-print repository, founded at Los Alamos and now housed at Cornell University, through which scientists have increasingly obtained and disseminated working papers in physics, mathematics, computer science, and quantitative biology.” (Fitzpatrick, 2011, p. 22).Research and academic research process are changing by the new century. Technological development is an important part of

academic changing. “During the second decade of the twentieth century, the need for research became an important aspect of universities missions, and so, universities responded by implementing mechanisms such as lowering teaching loads, instituting sabbatical leaves, revolving research funds and creating graduate assistant positions.” (Gardner, 2010, p. 13).Academic readings is important for the researches of scholars. The research process is the part of mission and vision of the research.“Zotero users can maintain detailed metadata for their own research sources, enabling them to quickly produce bibliographies and other citation information within their writing but they are also able to see what other scholars are reading.” (Fitzpatrick, 2011).Asking true questions is the part of research for survey and in-depth analysis. Scholarly academic process finds new data for research process. “Scholarship on the doctoral experience has expanded and deepened considerably over the past two decades. Early in that period, several higher education researchers, along with some faculty developers and teaching assistant directors, began to ask questions and conduct research about the doctoral experience.” (Gardner, 2010, p. 11).

3.5. Scientific Collaboration

Scientific communication is the basis of producing and generating innovation. The most important point in modern science is collaboration. Science is a process that develops by the gathering of different ideas of the people communicating with each other.

"Modern science is increasingly collaborative. The rise in scientific collaboration reveals itself in many ways, but one established way is through coauthorship patterns over time. While there

are clear differences among fields in the absolute numbers of coauthored articles, all fields show a similar pattern." (M. Olson, 2003).

Scientific communication is a complex process. Academicians, politicians, people producing science and everybody who does joint scientific researches benefit from scholarly communication and scientific collaboration processes.

"Similar assumptions were made with regard to interdisciplinary research (Steele and Stier 2000). These goals have to date not been tested. Today, scholars, policymakers, and scientists no longer take these assumptions for granted. Increasingly, they recognize that to define and evaluate the success of distributed and large-scale scientific collaborations is a complex task." (M. Olson, 2003).

Academic production processes have become easier day by day. Each passing day, scholarly communication and academic scientific production processes advance along with technology. In the past, academicians used to do their research for long hours from card catalogues in libraries; at the present timedatabases, online sources and the opportunity to easily reach the academicians from other countries who do the similar researches have accelerated academic scientific collaboration and production processes.

"Despite political tensions between the USA and Iran, scientific collaboration has proven surprisingly resilient. Between the periods 1996 to 2002 to 2004 to 2008, co-authored papers between these two countries increased from just 388 papers to 1,831 papers, an increase of 472%. Following the Iranian elections in June 2009, Iranian scientists called out to the international research community to ‘do everything possible to promote continued contact

with colleagues in Iran, if only to promote détente between Iran and the West when relations are contentious." (2011).

4. DISCUSSION

4.1.New Technologies and Their Social Effects

“Centers of oral communication included taverns, public baths and coffee-houses, an innovation in this period. Istanbul was famous in the late sixteenth century for its coffee houses, some 600 of them. Storytellers performed there, as they still did Yugoslavia in the 1930s when Parry and Lord visited the kafanas, as they were called, with their tape recorders.” (Briggs, 2002, p. 30).In the 19th century, socializing was defined as going to theater or taking somecoffee, and it was the part of daily routine of people. They were sitting in their house with their friends and relatives. Socialization process has changed as time goes by. “The development of electrical communication, beginning with the telegraph, a sense of imminent as well as immediate change developed, and the media debates of the second half of the twentieth century have encouraged re-evolution both of the invention of printing and of all the other technologies that were treated at their beginning as wonders.” (Briggs, Burke, 2002, p. 11).In conjunction with electronic communication, a new era began. The basis of this new era was social media and digital communication.The digital age introduces a new technical termwhich is technological innovation.“Technically, the world digital refers to binary digits, the zeroes and ones, that represent data manipulated and stored by a computer. The term is more broadly used to refer to anything relating to computers. It is often said that this is the digital age, a statement that conveys the extent to which computers and technology are pervasive.” (Johnson, 2005, p. 2).They returned another way as a result of social diffusion and

digitization of communication.Social diffusion has changed the ways they communicate with it. Social penetration theory has changed the social communication tool on the Internet.“Learner shared this concern with members of the office staff, who were upset and offended to hear that there were questions about thank you acknowledgement.” (Balzer, 2010, p. 5).The dialog has been renovated with a new layout and has entered a new way of communication. Digitalism has changed the process of communication. Digital resourceshelp academicians and students to search more easily for the information they needed. “Digital libraries can lead to a huge array of scholarly resources, both print and digital, but if students restrict their information discovery to digital resources, and ignore the truly vast record of knowledge that libraries have played a role in preserving throughout history, they wall themselves in.” (Johnson, 2005, p. 85).

4.2. New Technologies and Connected Learning

Changing technology and connected learning terminology have appeared with electronic devices. Connected learning and presenting something using electronics have started the education technology terminology. “Connected learning offers a way of thinking about where, when, and how learning might take place, given the massive changes in how people create, use and share information and expertise.” (Tierney, 2014, p. 192). Information creation and technological electronic device usage are based on the Internet and the Microsoft Office programs. A useful presentation tool among Microsoft Office programs is Microsoft Power Point.By using Power Point, preparing lecture notes and sharing themhave become easy.“In the past 15 years, the use of the presentation software Power Point and similar programs, such as Keynote or Prezi, have become more popular. Many people use the Power Point program

because it is easy as well as available as an integral part of Microsoft's Office program." (Hertz, 2015, p. 73).There are some criteria when presenting something by using technological device or transformation material. The criteria which are used to express the main theme of the lesson, allow the students and academics to deliver correctly. "Critics frequently comment on such things as:

- the importance of the manuscript to the subject area and the field in general;
- the thoroughness – relevance of the background material reviewed and analyzed;
- the methodological and statistical sophistication of the project;
- appropriateness of measurement and analytical procedures;
- the extent to which conclusion are properly qualified; and writing style." (Knapp, 2010, p. 19).

Technology is the helper of students and their teacher. Technology helps academic teachers to communicate with students in every area. "They state that making eye contact is the most important factor for a good delivery, whereas looking away from the audience is considered a poor way of presenting." (Hertz, 2015, p. 274).To keep eye contact with audiences and speaking, reading, listening to them is important. Connecting peopleby using body language is important but connected digital learning changes the body language area and presentation skills in an easy mannerto tell something to a group of students. Open access network and database is the other new technology to academicians for using in their research and to students for their homework, projects and theses. "For colleges and universities whose students and professors meet on-site, remote access to the library from home or work offers a

flexible, convenient approach to accessing library services and resources." (Johnson, 2005, p. 8). Open access data base is useful for all research projects. Some of the academicians use social media for their connected learning projects. Facebook, twitter and Linkedin are useful for understanding and following other academicians and their students' sharing. "In the most commonly used social networking sites, such as Facebook and LinkedIn, an individual creates a profile that uniquely identifies her or him and allows for dynamic, integrated images, video, and audio components, thus enabling sharable and flexible construction of identity. Within these sites, users keep public chronologies and diaries, send public and private messages, ask for comments from others associated with their posts, and uniquely identify themselves with preferences that publicly display their profile for all networked members to view. (Tierney, 2014, p. 268). Facebook and Twitter have private securities but sometimes friends can see others'sharing and messages. Social media is a part of connected learning. Academic teachers and their students use social media to communicate. Academicians share lesson notes or important messages, lesson histories or do online lessons and other things. "In this digital age, the concepts of lifelong learning and information literacy are often discussed in higher education. Administrators, faculty, and librarians are all attempting to find the best way to ensure that graduating students are equipped with the skills they need to be lifelong learners and succeed in a networked world. Many are looking to information literacy as the key." (Johnson, 2005, p. 49). Using technology for connecting with others is useful for Facebook and Twitter users. These are the network perspectives for people when they communicate or connect with each other."Networks are used for information sharing while not fully capitalizing on the flexibility, interactivity, and existing resources available through the media. To improve interaction from student to student, student to faculty and student to support

personnel, groups could be deliberately structured on social networks that facilitate mentorship and cross-aged role modeling for college students before their arrival on campus and that assist in retention support once students enroll. This networking is very powerful for incoming college freshman and transfer students, during times when students social, identity, and academic vulnerability is paramount." (Tierney, 2014, p. 268).The concept of creating a network was provided with address book technology revolution. E-mail addressis an important communication detail for mass media communicators. Yahoo Messenger and MSN Messenger are the first examples of it. With the emergence of social media, nobodyuses telephone book or address book now.Personal information which you want to know about someone has started with the sharing of it on personal pages. "Social networks can enable informal and formal mentorship opportunities to occur within and across genders." (Tierney, 2014, p. 269). Social network or social media is the social process of people's communication tools. Youngsters of the 21st century use social media all the time for their daily routine; their teachers and families use it for following social media, their children or students. Connected learning is an important part of the education and research process for 21st century education and academic perspective.

4.3.Technology in Society

Society means the social group of people who communicate with their group for their custom value. Libraries are the society of researchersand the group of readers. Technology has changed social group into digital researcher and digital reader. "Traditionally, academic libraries have offered bibliographic instruction classes to their on-campus students, and in recent years these courses have ranged in topic from learning how to search the library

catalogue and the Internet to using specific bibliographic resources, including databases and digital reference tools." (Johnson, 2005, p. 52).Technology and social communities have undergone many changes. Not only libraries affected by these changes, institutions have also been affected. Users of these institutions have also been affected."Over the last ten years the Internet has become a major influence on wide range of activities. It is now used for communications (e-mail, World Wide Web), banking, hotel and travel reservations, entertainment, news, and, a host of other applications. The Internet is now an essential feature of work, leisure, and study for many people, and its influence is likely to grow as more and more people are able to access the technology on a global basis." (Bowen, 2003, p. 8). Digital industry has created a culture."At the time of writing, the Internet and in particular the World Wide Web are the technologies that are driving change in postsecondary institutions." (Bowen, 2003, p. 9). Internet is the changing face of communication and reading process for people in academic life. "Socialization to digital library culture takes time. It involves learning the mechanics of online searching and extends to new interactions with information sources and with libraries." (Johnson, 2005, p. 69). Changing iseverywhere but the important part of changing is in theeducation area. Changing is the process of effective timing. The digitization process did not occur immediately in thedigitalized world. Ex: tapes, disks, CDs have first emerged in the online world."The advance of ICT is a fundamental impact on the innovation and development of digital communication. In the 1980s and early 1990s CD-ROMs, microfilms, microfiches and tapes were the principal alternatives to preserving and presenting print materials. At the same time, library automation was planned, employed, tested and improved with the implementation of computer networks to facilitate online searching of library catalogs." (Xia, 2009, p. 25).Along with digitization in higher education and in social

communities, its communication is supposed to become easier.Digitalisation process has not been fully completedin higher education.“Digital scholarship, the authors agree, can also help under-resourced universities by providing access for greater numbers of students to a well-supported, relevant and effective higher education and make access to higher education more democratic and liberalized.” (Oladokun, 2015, p. 48).

4.4. The Role of Media and Technology in Education

Culture is a very important part of socialization in a group of people. That group of people affects each other. Teachers use social media in education. Virtual reality is the important part of the education technology. Media is useful for university students’ education such as analyzing news, reading the culture of media, new media technologies and others.“Media and technology are everyday words that we use. Their meaning tends to be taken for granted, and the terms are often used interchangeably.” (Bowen, 2003, p. 48). 19th century and 21st century education are not the same. Too many things have changed with technology and new media. Digital environment, the Internet, online media and new media came to Turkey in1990s. Last period of this process is seen in America. Perhaps there was nothing a potential alignment between auto ethnography and the dominant culture of autobiography within North America, where a surge of memoirs, talk shows, and other media can be seen to disseminate an ideology that personal narratives express true and authentic selves.(Davis, 2014, p. 608).

Online media techniques are useful for higher education process. Student’s access system is useful for students’ course registration process and the process of communication with their teachers.Digital technology is useful for academic environment and academic changing

perspective. “These individually important processes can also be clustered to address the needs of distinct beneficiaries of higher education: processes that define the freshman year experience, processes that impact students’ ability to graduate within four years, processes that support a new faculty member’s growth into a nationally recognized scholar, or processes that extend the university’s expertise into the community to support the region’s economic growth.” (Balzer, 2010, p. 23).

That economic growth is going along with academic development. Academic and scholarly perspective of that economic growth is parallel with technological development. Media is useful for the growth perspective.“Technologies are physical things. Of themselves, they do not communicate. Media, however, are means of communication. They require a source of information, a means of transmitting information (including symbol systems), and a receiver, that is someone who is interested in, has access to, and knows how to interpret the communication.” (Bowen, 2003, p. 48).The most important innovation of technology is abbreviation of distances. Technology has shrunk the distance between people. It's made communication easier and accelerated the flow of information between masses and technological transformation. Unlike the 19th century, 21st century is much easier for people to access information and technology. It is the easiest provider of offering open access to media sources and data bases became available.“Both education and entertainment had long histories stretching back to the ancient world, in the settings of academies, libraries, games theatres. So too had intelligence. The verb inform derived from Latin originally meant both in English and French not only giving facts which might be incriminating, but forming the mind. The importance of information was already clearly appreciated in some circles in the

seventeenth century, but was stressed further in the commercial and industrial society of the nineteenth when notions of speed and distance were transformed." (Briggs, 2002, p. 188).

Technology was changed with IBM who found new computer technology. Then technology spread up very quickly. Technological transformation is the part of the digital industrial development, and the changing of this process started with IBM. At the moment,media devices and media technology are useful areas of the education and information society. "In the first phase of computer history, IBM, the International Business Machines Company had a huge business advantage. The product of a 1924 merger, which included the successor to the digital punched card Tabulating Machine Company founded by Herman Hollerith in 1896, had a distinctive corporate culture which served it well in dealing with governments and large-scale customers." (Briggs, 2002, p. 284).

4.5. New Technologies and their Scholarly Effect

Scholarly communication area is affectedby new technologies.This is called scholarly effect for academic area. Communication process has changed with technological changing. Team communication is a part of the scholarly communication."The more a team communicates in a longitudinal task, the stronger transactive memory system is." (Tierney, 2014, p. 159).Social instruction is a part of the scholarly communication. Scholarly communication means communicating with each other for academic achievement. That academic achievement is a part of the academic research and communication process. The early decades of the 19th century were not an easy period for the communication with others. But later in time,technological developments, new devices and new technologies ofthe

21st century have affected scholarly communication area. These affected academic research and academic sharing changed rapidly. Cognitive interdependence is an important part of the scholarly communication. “Being cognitively interdependent means that group members rely on each other for the learning of information. An individual’s success relies not only on what she knows but also on what her teammates know.” (Tierney, 2014, p. 158). Face to face communication is an important part of the scholarly communication. Memory is the transformative perspective and process. “The percentage of communication that is face to face is also a predictor of transactive memory. The more face to face communication, the stronger the transactive memory system suggest that face to face communication is more important earlier on when group members are still learning each other’s areas of expertise than later on when group members are utilizing known expertise.” (Tierney, 2014, p. 159). Social activity is important for the scholarly communication area. Social companies are the social and interactive ones that study together.“Creating the social company, how vertical and lateral engagement work together to create both depth and breadth of engagement. One of the end results of this type of activity is a conversation funnel that begins with awareness of the brand, leads to regular online participation with the brand via social platforms, and converts social participants into customers.” (Blanchard, 2011, p. 19).The development of different technologies has also been accompanied by a parallel development in media organizations – such as film companies, radio and television stations and networks, computer software companies – that attempt to exploit the technologies commercially and that look like a type of differentiation.“Social media-related tactical roles tend to encompass roles that are primarily customer- facing or directly in contact with the public through social media. These are your

digital customer service representatives, community managers, consumer insights managers, bloggers, content creators, and channel monitoring specialists." (Blanchard, 2011, p. 76).

Social media is a new technology for scholarly area. Scholarly communication is an important part of academic process and academic research process. Traditional model and new technologies is separately different. "The traditional method was to publish a scholarly book in a hardback or cloth-only edition in the first instance, with a view to achieving sales in the library market and among individuals with a specialist interest in the topic. Prior to 1960, most university presses tended to publish in cloth only; some presses occasionally released paperback editions of successful hardback, or sold paperback rights to commercial houses. The development of paperback lines in university presses began in a systematic way in the 1960's with a number of presses." (Thompson, 2005, p. 118). Traditional methods of scholarly communication are to communicate with others in oral and written culture. Those processes have changed with technological development. Ongoing communication processes haveskipped to a very different period."In previous eras, the workplace prompted the adoption of new technologies. Online social networking is different. It is a movement that affects us personally first profession ally second. Most of us get on Facebook to connect with friends before thinking about using it for business purposes. In some cases, the lines blur between our personal and professional worlds: we befriend colleagues and customers, refer friends for jobs at our employer, and make business purchase decisions based on a friend's recommendation." (Shih, 2011, p. 14).

An important part of new technologyis social media. Social media has changed with Facebook. Facebook is different than other social networking channels. "As early as 1995,

online social networking pioneers such as Classmates.com and SixDegrees.com introduced the notion of profile pages and friend connections. The following websites were Friendster, Orkut, Myspace, Bebo, and Hi5. These early social networking sites were tremendously popular, attracting tens of millions of users but have largely disappeared from the scene or been forced into certain regions or niches." (Shih, 2011, p. 20).Publishing industry has beenintegreted into digital communication process by increasing digital technology usage. Digital Publishing has emerged as a new technology."The culture of academic publishing houses has become permeated with a much greater awareness of the importance of the market as managers have struggled to come to terms with the consequences of declining sales. Editors have been obliged to become more market conscious in their own day to day practices." (Thompson, 2005, p. 137). Some of the important academic publishers have been transferred to digital area. These are Pearson, Oxford, Cambridge and others. "The founder of Basic Books Rosenthal was a New York publisher who had a great deal of experience publishing books by scholars and scientists for a general readership." (Thompson, 2005, p. 149).Technological development has changed the people's mind of writing and oral culture. Oral culture and written culture have first started with communication tools but technology is going too fast year by year.

"Educational technology has been around for a very long time. Wall paintings and hieroglyphics predated writing as an educational technology." (Bowen, 2003, p. 6). New technologies have affected education and publishing in academic and scholarly areas. Over time,the effects of technology in the academic field will be much more. Technological innovation is related to change and transformation. Knowledge production and technological

innovation can be achieved by academic studies.The important part of the technology is to be fast and active.

4.6. The Potentials and Benefits of Digital and Social Media

Social media or new media has the capability to bring people together. In this sense, social media is becoming a channel of communication within organizations.“Social media provides engaging, authentic and cognitively complex learning opportunities that can elicit higher order thinking, problem solving, and decision making in ways that are not as available in traditional classrooms. Social media and simulated environments provide opportunities by allowing students to interact with others on a global scale and by enabling them to experience virtual events and cultures that are outside the local community.” (Tierney, 2014, p. 76). High-tech or higher education technology has started with the first presentation model but over the time it has changed. Academicians write notes for students’ works or exams. Internet has rapidlychanged this process. E-mail accounts are useful for students to communicate with their teachers easily. “In the workplace, however, e-mail remains the most popular form of interpersonal business communication.” (Cardon, 2015, p. 274).E-mail systems are useful but MSN messanger and yahoo are much more useful for instant communication. Those processes are going along with social media accounts. Yonja, Hi5 and others were the first social media networks on the Internet. Zuckerberg’s Facebook has changed all communication processes rapidly. “Facebook has been perceived as a technological tool that is largely successful at building community.” (Wankel, 2012, p. 58). Zuckerberg is the founder of Facebook thatcommunicates and shares everything with each other. Every communication process has changed with Facebook. Those are trade, industry, education and others… Every person

andgroup have been affected from those changes. Twitter has created the most important transformation in communication process. “Twitter was made for my mom. That’s because she’s always infinitely interested in what I am doing and thinking, no matter how mundane- or inane. You know what it’s like the minute your mom reaches you; she wants to know where you are and what you are doing” (Israel, 2009, p. 1). People understand that communication is a process that can be changedday by day with technological development. “In recent years, the use of vivid, decision-focused scenarios has changed planning into a management process capable of discovering radical new consensus and moving decisively to appropriate action.” (Fahey, 2011, p. 384). Social media has changed the communication process and this is affectedby higher education. So academicians’ communication process has changed as well. They can communicate and share something very easily by using Facebook now. “To examine enterprise social networking platforms, survey results from 227 business professionals are presented that address three areas: frequency of use of social networking for team communication compared to other communication channels, perceived effectiveness of social networking tools for team communication compared to other communication channels, and attitudes toward social networking for team communication. Generally, the results show that traditional communication channels are used more frequently and considered more effective for team communication.” (Cardon, 2015, p. 272). Social teamwork process is going easily with social media users. Social media’s other users are firms, companies and organizations’ human resources departments because social media is the living CV for people. “A social media program does not live in a vacuum. It reachesout across the organization to include every business function, from marketing and business development to Human Resources and IT.” (Blanchard, 2011, p. 57).When they do some teamwork, academic area looks for the other

academician's profile in order to understand his/her life, and who he-sheis. Other usage areas of social media are for example Facebook, learning management systems or education technologies to communicate with other academicians and their students."Facebook offers some potential as a learning management system (LMS)." (Wankel, 2012, p. 59).Facebook's private group"LMS" – learning management system is very useful for university staff."Like the social network sites, applications within an LMS include discussions, blogs, learning modules, conferencing facilities, and host a range of media." (Wankel, 2012, p. 59).Social media has changed people's world and beliefs. Those social changes are in people's life style. "Through social media, individuals working as a collective have the power to influence culture, information and knowledge." (Tierney, 2014, p. 114). Changing process is going along with social penetration theory. "The Social Penetration Theory proposes that, as relationships develop, interpersonal communication moves from relatively shallow, non-intimate levels to deeper, more intimate ones. The theory was formulated by psychologistsIrwin Altman and Dalmas Taylor in 1973 to provide an understanding of the closeness between two individuals." *(*Wikipedia, 2016*). Social PenetrationTheory* is a part of social networking.People share some things with others, and other people share more, and this is the circle of communication and sharing."In the same ways that Facebook and other social network sites offer the user an opportunity to increase social presence, the focus on increased interactivity often highlights positive interactions, and fails to also showcase interactions that do not specifically increase learning outcomes." (Wankel, 2012, p. 59). Facebook or social media is the organizational communication area for people. They affecttogether with the mass. This is the computer mediated communication process. Computer-mediated communication can be thought as another way in which people can develop relationships. The Internet has

taught to broaden the way of people's communication skills and relationships by opening up a new window in which people could be open-minded and unconventional and partner from traditional limitations like time and place.(Yum & Hara, 2005). Too many thingsare changing every day and technology has changed rapidly and directly. People wholive in the21st century use technology very frequently and directly. Theywere born in digital age and adapted to technology very easily. Their relationships go online. "Overall, the more popular online relationships become, the more similar the expectations and patterns of online relationships are likely to become to those of offline relationships. Online is becoming simply another social context in which people meet their prospective relationship partners, as well as forming, developing, ending relationships, and starting over, sometimes without ever experiencing actual physical contact."(Yum & Hara, 2005).

Online area, digital area, social media and new technologies are very useful for higher education and university students. Academicians use social media because of itssocial penetration. "Social penetration is a scientific theory that makes predictions about relationship development based on levels of self disclosure. Based on a sort of cost-reward model, this theory argues that for a relationship to develop, both parties must self disclose. In judging this theory, it is able to make predictions depending on levels of self-disclosure. It explains what happens in relationships and this theory has some falsifiability."(Altman, Taylor, 1973). Social media is transforming the people's communication process in scholarly area. This is the scholarly effect and named by social penetration of computer-mediated communication. Academicians solve their problems by using social media. They find new partners and new team workers and sometimes they find a partner for their project or article. Social media gives a chance to people for online communication network. Social media is the new world's

academicians' business card. Everything goes online and this process affects all education areas and also higher education area.

4.7.Digital Culture andScholarly Effect

Technological and scientific development is often presumed to have a privileged relationship with the future. (Facere, 2011, p. 6).Culture is the group of people who believe and have the same or similar behavior. These behaviorsare going to be culture and be integrated to people in a social group. "Culture refers to the cumulative deposit of knowledge, experience, beliefs, values, attitudes, meanings, hierarchies, religion, notions of time, roles, spatial relations, concepts of the universe, and material objects and possessions acquired by a group of people in the course of generations through individual and group striving." (Hofstede, 1997). But culture has a changeable perspective and the 21st century's global culture has shaped with technological development and the Internet. "We live in a technological culture, in a culture that is thoroughly influenced by modern technology and society. It is not easily possible I will argue to understand modern Western culture without taking in the account the role of science and technology."(Bijker).Science and technology have changed, too. While the first computer was in the size of a room, at the moment it can fit into a palm. People can adapt very quickly to technological changes, and cultural changes happen so quickly. The underlying structure of cultural changes prepares the technological changes. They change the cultural structure of societies to adapt to technological changes over time."When intelligent people understand the relationship between culture and technology, they can evaluate the options and negotiate better choices." (Wise, 2006, p.1).Culture has been inspired by many different elements andchanges under the influence of cultural technology.Cultural changes, especially as seen after the

industrial revolution ushered a new era and a new link. Social structures of people changed along with the technology after the industrial revolution. Digital age changed the social structure of the new social digital culture, in conjunction with thenew communities occurred.“Modern technologies since the industrial revolution are also much more powerful than physical humans, and so the shadow of modern technology is that it actually shapes and determines the human, that we are slaves to the machine.”(Wise,2006, p. 3).The basis of technology varies with social structure. The first thing that you would draw the picture of on a wall would be the first technological innovation for that period.The first person you would draw the picture of it on the wall, would be the first technological innovation for that period.“The socio-organizational mode of appropriation of science and technology includes two main sets of institutions. The first refers directly to the techno-scientific system, and includes all the institutions involved in scientific and technological activities within a given society.”(Godin, 2000, p. 48).Media is the guide of people to understand the cultural changes, cultural barriers or cultural differences. “The future is digital for media studies, and that will require new competencies, for instance in large-scale, computer-generated data; new horizons, for instance linking our interdisciplinary field with the natural sciences, bioscience, and science and technology studies and new problem situations, for instance moving beyond the familiar producer – text/commodity – consumer chain to an evolving social – network model of the media. Digital futures will pose serious questions for media studies as well as for media organizations and audiences.” (Hartley, 2012).Social media creates a lot of time in different fields of use. The different aspects of academic innovation and academic technology usage are to be revealed. Media, new media, social media, and educational technology became a part of academic life.“While the principle argument in favour of list diversification for academic

publishers is unquestionably economic there is also an argument of a more diversified list can produce ranging from marketing synergies to the job satisfaction of editors. There are some senior managers who believe that good academic lists have their own architecture and that the role of an editor is to take responsibility for the list as a whole, thereby ensuring that the subject is well represented at all the levels at which it is studied and taught. One director of a major university press put it like this." (Thompson, 2005, p. 143).The renewal of the academic field has changed the digital world, influenced and transformed it.Just beyond the usage of social media in communication,peopleshare information and events intheir daily routines have been an area of social activity. For the academic field and the academic field of social media, the influencers constitute an integral part of this process."People oftenusethetermssocialnetworkingandsocialmediainterchangeably. Socialnetworkingoftenfacilitiesmanyforms of social media, but a lot of socialmediaalsoexistsoutside of socialnetworking sites."(Shih, 2011, p. 17).

4.8.Education Technology, Online Learning and New Media

Educational technology first started with the first machine or new technology used in education. New technology has been adaptedto all education processes. "Educators around the world are being told that they need to transform education systems to adapt young people for a future global knowledge economy." (Facer, 2011, p. 1).New media is the part of this transformation. Online learning, mobile learning and other learning methodologies are useful for students and their teachers. "It is necessary to briefly characterize the devices. A more comprehensive treatment can be found in my previous book on mobile, Designing mLearning:

Tapping into the Mobile Revolution for Organizational Performance (2011), Learning Edge: Tools and Technologies for Developing Your Teams (2010). A brief characterization suggests that the market is converging as devices are increasingly integrating a rich set of capabilities." (Quinn, 2012, p. 2).Online learning, webinar and webex are the important part of the learning systems now. At the end of the 20thcentury, online learning technologies were used in America in their associations. People sometimes paidfee for education or took some education for free. Ex: UCLA extension online programs, American librarian association, Booklist online webinar, Pearson publishing online webinar, Oxford online webinar and others. Those are the new digital scientific culture and they have very different oral and writing ways. "Despite the varieties of definitions of scientific culture, we can easily notice that what is common to all of them is the idea of appropriation."(Godin, 2000, p. 44).The new media is an important part of those technologies because this system works in devices. Apple and Samsung have important tablet producing technologies in the world. "Other mobile devices were later to the game. Digital media players were clunky or hard to use until Apple's iPod was released in 2001."(Quinn, 2012, p. 2). New media technologies and devices have changed education system rapidly. The new education model is becoming an online model. Education is the area which technology was firstly used and every day it is spreading from elementary school to University. The media, especially new media, in conjunction with educational technology has come and the future is not far away. The adaptation takes place in a short period of time considered the other branches of technology. In this process there are questions that should be asked."To do so we need to rewrite the relationship between education, socio-technical change and the future. And that means addressing three important questions:

- How can we understand how the future gets made?

• How can we understand the relationship between social and technologicalchange?

• How can we rewrite the relationship between education and the future?" (Facer, 2011, p. 4).The use of technology in education, educational technology or education is directed towards a digital content platform. This digital orientation as a result of smartphones, tablets, education, training and content producers has become a tool in the field of education of employees. Educational technology has emerged as a timely and chalk board. Tablets, smartphones, projections, online trainings, presentation techniques and educational technologies are today's databases. Depending on the future for the storing of them, it is seen that there will be improvements and they will be shaped very differently.

The Mobile Devices - Conectivity

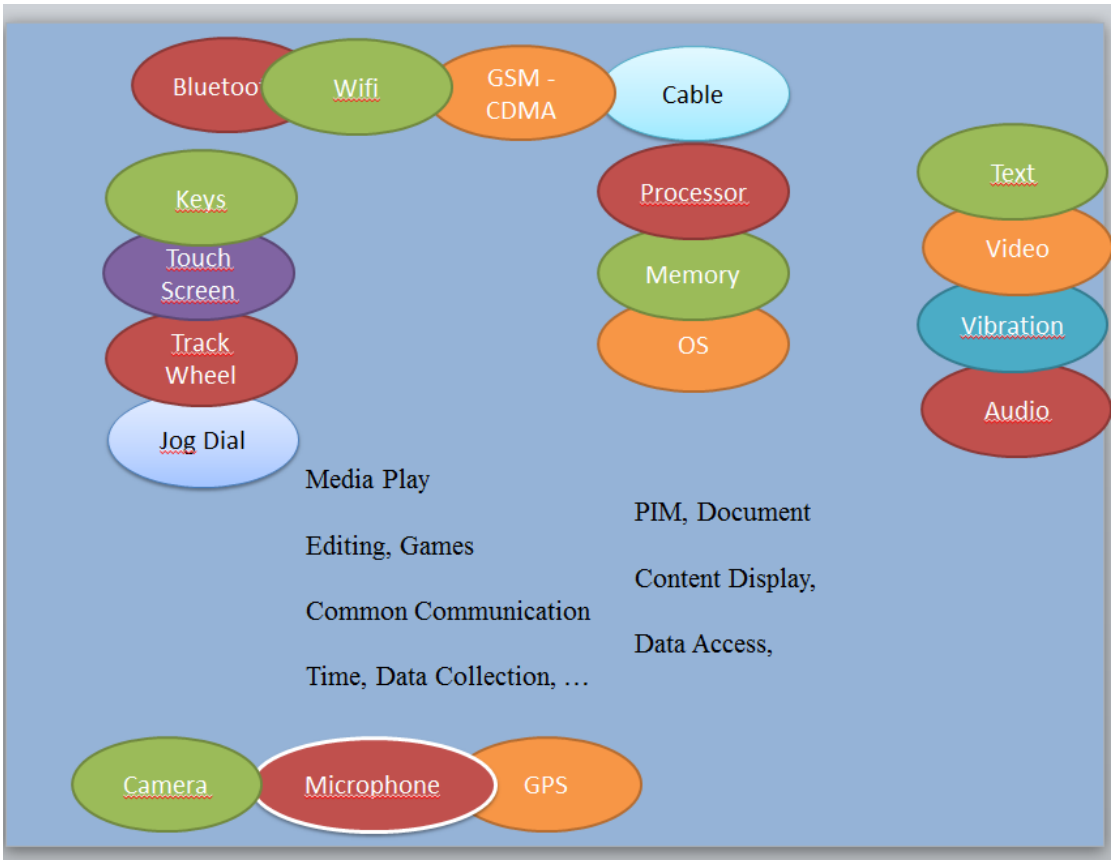


Figure 3(Quinn, 2012).

Mobile phone is an important part of communication technology. New technology has been adapted to mobile phones with the Internet like touchscreen, video streaming, video conference, vibration, audio tools, memory expansions, camera modules and GPS. Those environments change the mobile phone usage because people used to handle mobile phone to communicate with others using voice option. But now people use it for navigation and touchscreen is the importantfeature of it. Document editing and checking mailsare other useful choices for daily routines. Those processes have changed the cultural setting of peoplewho

live with news all the time.“The concept of definition culture is by definition central to cultural studies, yet there is no correct or definitive meaning attached to it. In describing it as one of the two or three most complicated words in the English language, Williams indicates the character of cultural studies as an arena of debate and contestation.” (Barker, 1999, p. 2). Mobile phone, tablet and online technologies have opened a new cultural door for the world. “While capabilities in input haven’t changed significantly and most changes are liable to be evolitionary instead of revolutionary, the continuing miniaturizationof technology and increasing capability of devices mean that the input possibilities like real continues to expand. By being able to communicate with (and through) the devices, we are delivering mobile processing and consequently augmentation capabilities.” (Quinn, 2012).Everything may not be correct while connecting technology with technology or cultural change. Establishing a link with each other needs an increase in the expansion of new technologies. Life has become easy whiletravellingwith new technologies and new technological equipments.“While culture is concerned with the various ways we make sense of the world, meanings are not simply out there waiting for us to grasp them; they are generated through signs, most notably language. Language is taken to be at the heart of culture and identity for two central and related reasons; first language is the privileged medium in which cultural meanings are formed which we form knowledge about ourselves and the social world.” (Barker, 1999, p. 2).Easy access to social area constitutes the foundation of the new world where communication is at the highest point like a global village without borders.“They understand that knowledge has a structure that organizes its diverse elements and that academic disciplines reflect ways of knowing and understanding the world.” (Tierney, 2014, p. 74).The production and use of knowledge processes and online technologies are easier with it. Social media information is easy to

formulate, and provides easy access to their users. Thought, knowledge, and easy access to digital technologies provides opportunity for easy learning.

The four keys to college and career readiness

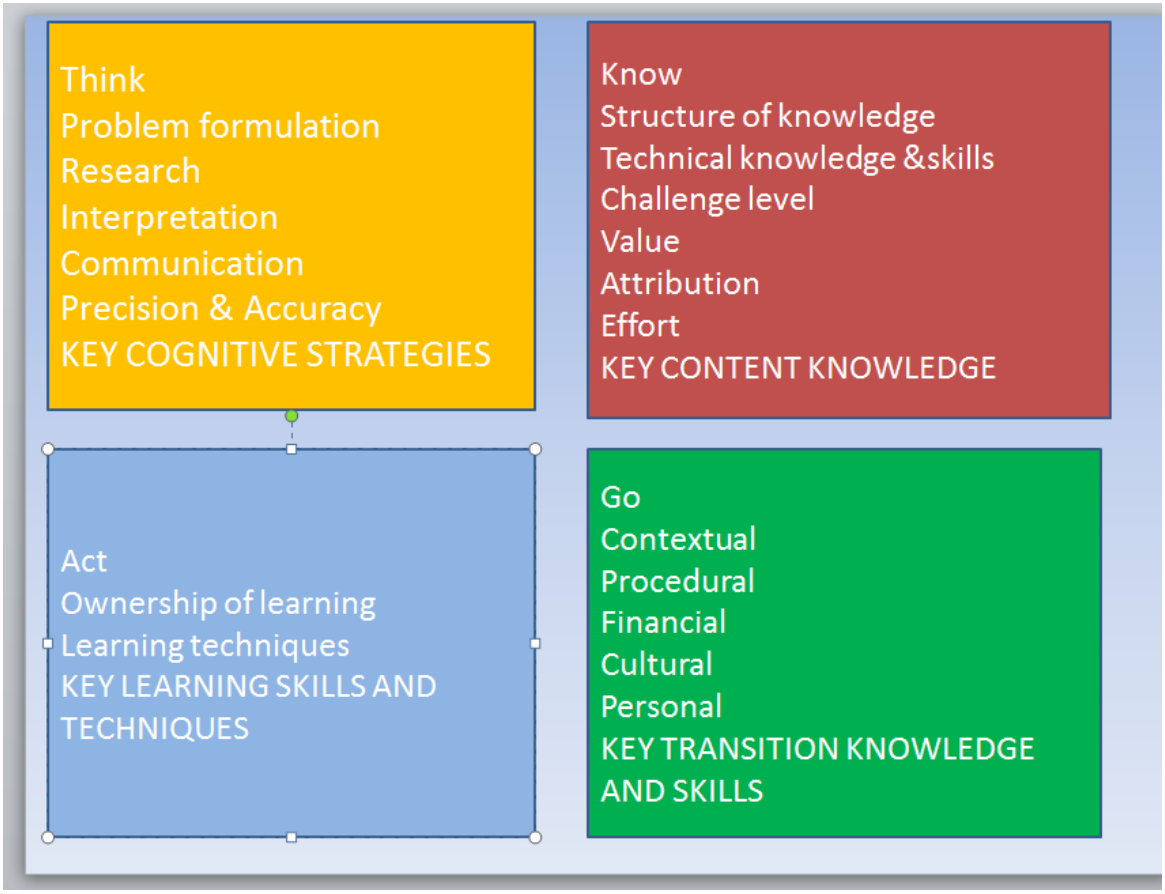


Figure 4.(Tierney, 2014, p. 74).

Communication is complementary. Today, social communication constitutes the basic framework of social media. What we call new media and social media platform in the field of digital media,people have easy access to information which they can comment on and not just watching for information to be produced. In this sense, there is opportunity to offer a range of

digital platforms to be addressed. These platforms are in the sense of academic communication that are used by educational technologies.“During a two month period alone while writing this book, for example, the following postsecondary developments surfaced, among others:

- ITunesU: Apple launched free software for students to download or create textbooks and for professors to create digital curriculum. (Tierney, 2014, p. 116).
- MITx: Massachusetts Institute of Technology shared plans to create a self-service learning system where students could take online tests and earn certificates online.
- StraighterLine: The online postsecondary program announced it would be offering Collegiate Learning Assessments that could serve as indicators of proficiency in subject areas to employers or postsecondary institutions.
- Udacity: A new company created by a Stanford University professor opened to offer highly scalable, low – cost online courses.
- Ted Ed: The hugely popular Ted talks expanded to include a curated collection of lessons designed by top-notch educators and animators designed for teachers and individual users.” (Tierney, 2014, p. 116).

While today’s growing and expanding educational technology considered,this expansion and growth is not justconnected to the internet and social media. This newly created area and its applications are expanding every day with other features. The use of it is becoming widespread in the academic field of educational technology and new media. In this sense, prevalence is expected to gain more in the future.

4.9. Education Technology and Social Media

Everything in internet has started ARPA.NET. “Their position on top of the information superstructure would be threatened, then undermined, and ultimately toppled by the development of the internet. There are plenty of histories of the internet available, not surprisingly, on the internet. A visionary scientist by the name of Robert Kahn is generally credited with getting the ball rolling with the research that would lead to something called ARPANET, which would in turn lead to a bewildering array of acronyms and eventually to the system we call the internet.” (Hewitt, 2005, p. 66).Every day, millions of people useonline social networks for sharing and following each other. Before the social media and in post periods, it was observed that there were differences between the cultural and social meaning. With the emergence of social media; socialization, communication, comprehension, understanding, listening skills and actions has changed. The useful and known social media era is Facebook. "Facebook was the next most favored use of online time, followed by search, e-mail, music and video; of the top 10 all the rest were in social media sites." (Phillips, 2004, p. 102).Social media means the sharing and followingdifferent things, following news with your friends, communicating with your friends and joining their daily life easily. Social media is a part of daily life for many people. Some of these people use social media to find the news."The analogy works for all social media, whether they are video-sharing on YouTube, a comment in Facebook or an amendment in Wikipedia. Knowing the reach of social media and understanding that such content can, because of convergence, hop from one medium to another with ease; itis not difficult to understand that these small groups have immense power. They are not mass media, they are network media." (Phillips, 2004, p. 114). Social media is

the network media which people use it to communicate with other people. They follow thenews and take a sample from their life. Social media is useful for face to face communication. Academic era academicians share new articles, conference notes, new books and other academicissues in social media. Academicians follow other academicians' researches and projects, find new study friends and find new study areas. This process has started with the Internet. The Internet is an important part ofpeople's academic life with E-mail, pedia, web page, database and others. "Although it may seem that higher education has only just encountered the Internet through MOOCs, there is a long history of using the Internet to support education, both for distance education students, and, like the original MOOC, for blended learning mixing face to face interaction on a university campus and online learning. This has been particularly facilitated by the wide adoption of web-based learning management systems (LMS) such as Blackboard and Moodle. Traditional face to face lectures have been recorded and made available online since the late 1990s." (Kent, 2014, p. 3).Online learning technologies sometimes use social media for example from "Coursera", and people take course for their specific educations. There are approximately one thousand different courses on the web that people can joinonline, listen from their houses and take certificate. This education is very good for people to get closer with others who study in the same area. Academic education and academic scholarly communication are changing with social media, social blogging and online education tools. "Facebook is a social network in that it allows individuals to construct a profile and create a network of their connections and view the connections of their contacts. It is similar to other networks that pre and post-date it, such as Friends Reunited, Myspace, Twitter, YouTube and Linkedin, but the key distinctive features of Facebook are that it has rapidly grown to dominant position, especially within universities,

and the range of uses is constantly changing and expanding such as social gaming, chat and the like feature.” (Kent, 2014, p. 13).Social media is developed every year and it updates itself with the latest news. Facebook messenger is used for instant messaging and also YouTube users can make their own comments."The fastest-growing use of timealso reflected this appeal of social media. The fastest-growing time consumers were in order: Facebook, YouTube, Second Life, Google Search, Google Maps, Wikipedia, Asda, iTunes, Club Penguin and Veoh (another video-sharing site). Six out of 10 were social media, that is, Web 2.0 sites." (Phillips, 2004, p. 103).New social media area is growingevery year and it brings back some changes. Web 2.0 tools are the important part of change for social media. Giving messages, writing comments, sharing and following contents in social media are a part of academic life because academicians follow and share the news in social media. For example; they use YouTube in their lessons. ITunes is also very useful for education, and academicians put their lessons videos on iTunes and share with their students and other academicians who are tracking.“It is perhaps more useful to think of Facebook as a social medium echoing earlier discourses around Web 2.0. These discourses emphasize the peer-led-co-creation of shareable content and thinking of Facebook in this way enables us to foreground the malleable nature of site.” (Kent, 2014, p. 13).Everyone shares their own truth and own beliefs in social media. This is not always included in academic information sharing. A lot of academic research can be doneon social media users in the field. Social media constitutes a new research area for Social Sciences. "This is a discipline beyond the organization’s web presence, social media presence and local presence, and is a discipline in its own right." (Phillips, 2004, p. 66).Social media has brought a change in research process. Academicians use social media directly for their research. However there is privacy problem. Everybody can easily see others’ data or

information.“From its outset, Facebook has been at the center of debates about privacy. These debates focus around the extent to which individuals participate in an exchange whereby they agree to give up some of their privacy in order to benefit from the information shared by others in their network.” (Kent, 2014, p. 14-15).Those network options change and academic research is a social area that is very popular for the academic area. Facebook’s messenger is a good example of a scholarly communication tool. It includes like button, emotion button and in addition you can write your own review for recently uploaded news. Social media is useful for academic communication process at a university. The way of communication atuniversities which is flowing from teacher to student is obtained by social media.This area has started a new learning management system. Some of the top universities in Turkey use LMS. “The relationship between U.S. agricultural innovation and public research universities has a long history, but studies of this relationship have had little influence on contemporary discussions of university technology transfer.” (Kenney, 2014, p. 2).These technology transfer offices have started to communicate with IT departments. Everybody has a user id and some universities give open source id for their teachers. Academicians use databases and open source networks very easily for their academic researches. Some publishers and database firms give free access for academicians for one or two months.“The success of a large number of San Diego firms suggests an alternative theory of the role of regional networks in firm performance access to strong entrepreneurially focused managers early in a firm’s development may lead to competitive success for many firms.” (Kenney, 2014, p. 94).The Internet offers a lot of amenities and they created a new creative power within the company. It has to be very easy to do research by using the internet. The right question is about how to work in a plentitude of the arisen information. Academic information and academic research

databases as a source of correct and clear way to access the sites have appeared.Twitter is the new phenomenon for people to communicate instantly.“Twitterville connotes a certain homey, small town feel, a place where you meet people you know as you stroll down familiar streets. These are people with whom you share common friends, interests, and ethics. When you meet a stranger here, chances are you have mutual friends or interests.” (Israel, 2009, p. 9).Social media has created Social Studies. Social work’s current social media is Twitter which is one of the createdguestrooms. These shares provide the possibility of instant sharing on Twitter with a certain letter.“Twitterville is a golden moment in a new approach, one that I call massive micro marketing. It is a conversation, rather than a monologue. It’s also more personal. In Twitter, what the community thinks of an individual usually has more value in more cases than does traditional brand identity.” (Israel, 2009, 93).Social media and academia in the field of educationhave been created by transformation and regeneration. “An important distinction between innovation and invention is that innovation is the successful practical deployment of an idea or invention.” (Shih, 2011, p. 148).Social media has become an online resume for people. While sharing your personal areawith others by using social media,they become aware of it without being disturbed. In the same way, the number of academic partners who found each other with the help of social media is increasing.“A recent survey of recruiters across the United States revealed that %80 of employers are already using or planning to use social networking sites to identify and attract job candidates this year.” (Shih, 2011, p. 160). Social media is useful for scholarly academic era and it is changing year by year according to technological development. “Some of the more popular social networking Web sites in today’s online environment include social networking Web sites such as Facebook, MySpace,

Xiaonei, hi5, Orkut, Bebo, and Tagged Web sites to create your own Web sites." (Wankel, 2012, p. 335).

4.10. Managing Education Technology in Higher Education

With the advent of technology, higher education has undergone a transformation. What forms the basis of this transformation is the introduction of technology in education. However, technology is used as a method of learning from the very beginning. Also any type of new development in higher education institutions in the academic sensehas brought adaptation to the process."The organization and structure of the modern university began from the mid to late nineteenth century. The forces leading to these changes were complex and interrelated. The growth of the nation state and the extension of empire required a large increase in government bureaucrats, who tended to be taught the classics. The rise of science and the recognition of its importance for economic development clusters around universities." (Bates, 2011, p. 9-10).The use of technology in academia is established for some communication skills. The communication tool is improving by technological developments.

- "Good communication skills (reading, writing, speaking, listening)
- Ability to learn independently
- Social skills (ethics, positive attitudes, responsibility)
- Teamwork
- Ability to adapt to changing circumstances
- Thinking skills (problem solving, critical, logical and numerical thinking)

- Knowledge navigation (where to get information and how to process it)" (Bates, 2011, p. 10).

21st century's academic area is changingby skills and technology. Education technology is useful for higher education because academic area is the part of people's effective development for their career and it is developed with innovation process. "They are easy with modern strategic frameworks for innovation and take it upon themselves to rewrite the rules of the competitive game with respect to technology markets and organization. Strong internal resources are coupled with a high degree of absorptive capacity which can enable diversification into other sectors, where their own skills capabilities bring new advantages and redefine the ways in which firms traditionally comport or wish to comport." (Tidd, 2009, p. 75).Technological improvement is not only limited to the field they spread. The internet itself is the best example of it.The new information and communications technologies are having a similar effect. For this reason, information and communications technologies are used for teaching and learning."(Bates, 2011, p. 11). Technology is a part of daily life for most people, and academic area use technology and education technology. Education technologies are the important part of daily routine for academicians. Scholarly academic era uses digital literacy for using academic tools.By this means,the internet's useful parts in scholarly communication are;

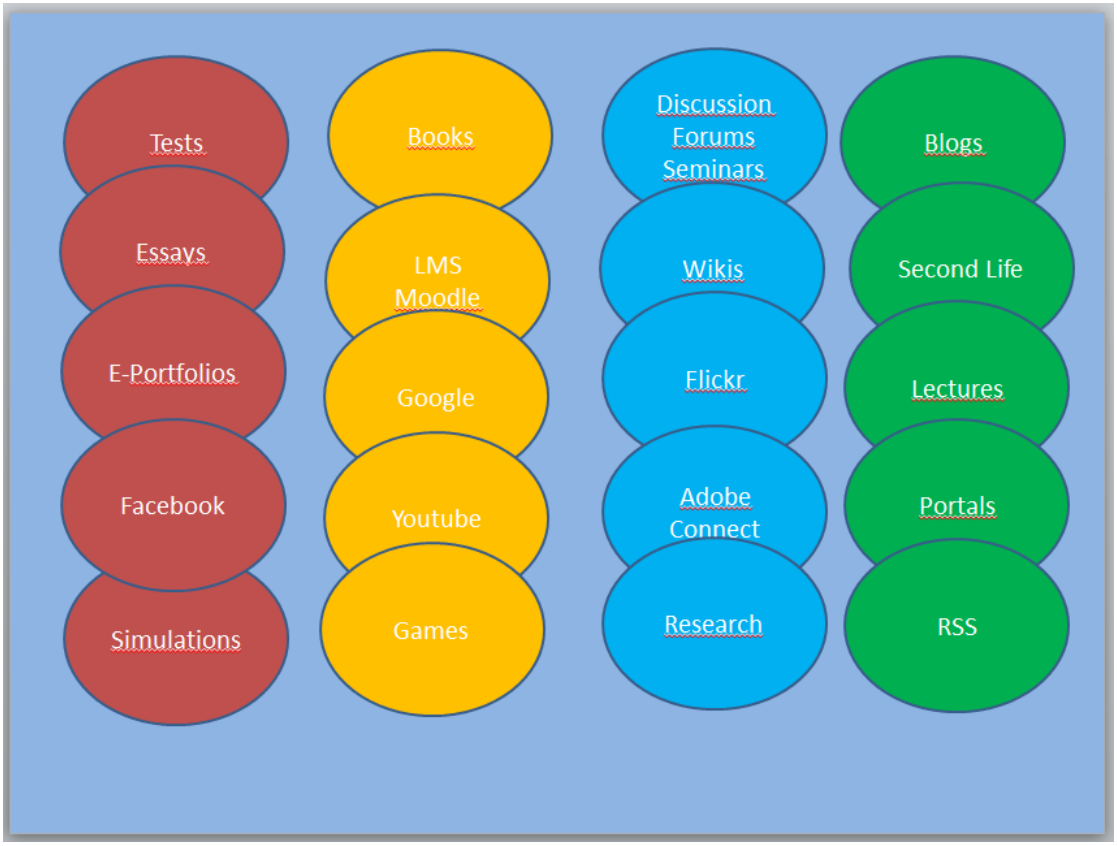
- "Digital literate in the sense of being comfortable and familiar with digital technology
- Connected to friends and the world through technology
- Immediacy: rapid multitasking, fast response to communications

- Experiential: they prefer to learn by doing rather than being told
- Highly social: they gravitate toward activities that promote and reinforce social interaction." (Bates, 2011).

More and more technologyis used by academicians in the field of education.This spreads from scientific research to user processes in public works. Especially YouTube, Google scholar, Facebook, Twitter, LinkedIn and online research databases (e.g. Ebsco) on educational technology have become the best known ones.The use of educational technology for people is to socialize them more easily and we are not talking about face-to-face socializing, this is digital socialization. Digital literacy is increasing in every academic area and alsoamong the employees ofacademy. The use of educational technology in higher education institutions of academy is not only limited to the use of power point projector. Social media is used as a communication tool and a sharing tool. The habit of sharing and following while working in a higher education institution is becoming a preference for the reader."On the one hand, many of these chapters speak of imaginations and intellects being reshaped by interlocutors and institutions and themselves reshaping their students, teachers, colleagues, and environment."(Li, 2006, p. 10). Technology has changed the academic era and this is changing the social life of people. Web 2.0 tool is effective for higher education.

Analysis of Web 2.0 Tools From An Educational Perspective

Objectivist **Constructivist**



Teacher Control **Learner Control**

Figure 5.

Education technology is being changed with Web.2.0 technology. The technology is facilitated with the use of modern methods in education. Using Web 2.0 applications is very useful, and the implementation of new learning techniques are easier.“Reaching for philosophies that will enable them to cross and bridge social and cultural, epistemological and disciplinary borders,

and apparent incommensurability, these faculty narrators present valuable criticisms and perspectives, revise institutional policies, and implement fresh pedagogical practices that contribute to the creation of new knowledge in higher education, both theoretical and practical."(Li, 2006, p. 17).

Training and continuous self-improvement constitute a process. The area which is quickly affected by technology is Education. Higher education is a way that gives direction to the technology, and it should proceed and innovation must be kept in this process. Academic field employees also actively keep up with technological developments in order to improve themselves in their area. They especially use educational technologies and Web 2.0 applications for students and academicians in foreign universities. In Turkey, this process is used in institutions for educational technologies and Web 2.0 applications mostly exist in private universities."In eight centuries, they have undergone massive expansion, the introduction of fundamentally new areas of scholarship, and radical restructuring, while protecting their core mission." (Bates, 2011, p. 3).Higher education is the cornerstone of Science. Higher education develops and progresses as science progresses."In higher education, there are also different epistemological positions. Strongly influenced by the development of science, one dominant epistemological position is objectivism." (Bates, 2011, p. 44).Enlightened audience creates the basis of intellectual thought. The existence of this enlightened Academy continues in the masses. The increase in the number of higher education institutions depends on the university's intellectual level in the academic field."The philosophical and theoretical training of intellectuals is a central and pivotal role of higher education in American society. To see the world differently in patterns and formulations that

go beyond the commonplace has been one of the creative and critical burdens of the intellectual. The challenge to institutions of higher learning has been to fine-tune this intellectual quest. Universities and colleges in America have historically and traditionally been citadels of intellectual thought."(Obakeng, 2001, p. 31).American higher education puts a focus on academic communication in the sense of the Academy.

4.11. Education Technology and Scholarly Communication

"The Internet is the social, economic, and political pressures that are forcing changes within the academic area. Describe how new technology, and particularly and the internet, is influencing teaching and learning system. Discuss the relationship among knowledge, learning, teaching and nature of media and how this relationship should inform are use of technology for teaching and learning.Examine future development in technology and how they may influence design at delivery of teaching" (Bowen, 2003, p. 2).People who use the Internet seem like using itfor mostly education purposes. Blogs, Facebook and Twitter are the samples of this education technology. "These buildings blocks are for the most part, for just the downtown business section. I use a big tent definition of business that includes anything from a home office to a global enterprise. I also include government, the media, and nonprofits." (Israel, 2009, p. 89).Academics use online blogs to share and communicate their new products. Social media is the important education technology material because many people use Facebook everyday. "Facebook is emerging as a popular recruiting tool because of its extensive reach to 500 million people around the world more than an order of magnitude larger than either LinkedIn or Twitter." (Shih, 2011, p. 161).Educational technology will enlarge every day, and online books, databases in the current social media, plug-ins and

databases are only few examples of it. “The increasing interactivity within social networking sites such as Facebook and among other Web 2.0 environments makes it challenging to necessarily monitor and quality assure the blurred spaces between academic work, social behaviors, and the environments that they merge.” (Wankel, 2012, p. 69).Facebook, which is the best known social networking platform, may be used in the sense of academic field by educational technology users. Recently, Web 2.0 technologies are used in Education within schools and institutions for higher education.“The invention of the mechanical printing press was a product of changing times further became a major influence on change in society. Information technology, and particularly the Internet, is a similar consequence and cause of major change in our society, including our methods of teaching.” (Bowen, 2003, p. 3).The Internet has become an information technology product and at the sametime an educational stakeholder. Social media has been complementing this process.“This has the potential to reduce the effectiveness of social media by institutions of higher education and to create a barrier in the use of social media before the benefits can even be fully realized.” (Wankel, 2012, p. 333).Academic communication is one of the most used areas of educational technology and higher education levels use education technology in scholarly communication era. “Such detailed consideration of scope and sequence is less common in higher education. Introductory classes lead to intermediate and advanced offerings and the scope of each is intended to build on the last and support the next, but often this alignment of content is difficult to achieve.” (Unwin, 2012, p. 6). Technological development is the face of education. Technology is part of the higher education’s academic era andsocial media is part of higher education’s communication process. “Web sites such as Twitter, professional networking Web sites such as Linkedin, social gaming Web sites such as Friendster, photo sharing Web

sitessuch as Flickr, video sharing Web sites such as YouTube, Blogging."(Wankel, 2012, p. 335). Research is the important part of all academic processes and education technology is part of the research process for academic era. "Research into learning cycles, transfer, expert vs. novice learning and threshold concepts, though coming from varied sources, all suggest the value of considering scope and sequence seriously." (Unwin, 2012, p. 88).Education technology is useful for academic innovation. Researching and academic research tool are useful for scholarly communication. Open access and educational resources are a part of the academic scholarly communication. "The move toward open educational resources has important consequences for course design, intellectual property rights of faculty, the role of instructors, and assessment. It could possibly provide a means to improve the cost effectiveness of higher education." (Bates, 2011, p. 40). Scholarly communication uses the academic area for joining daily events. Scholarly communication use education technology to catch the news and research for new academic projects.

4.12. Education Technology and the Future of Academia

The academic climate is changing along and shaped with technology. This change depends on the basis of academics and academic work. Every day more and more technology is used in the academic field. The area of use enlarges while communication in the digital environment increases."The web has become even more pervasive with the growing availability and diversity of devices providing connectivity. Mobile computing has enabled the surge of an entirely new sector of learning: mLearning. This area has grown exponentially with the use of devices within several categories, including smartphones, netbooks, tablets, e-readers, and laptops." (Shattuck, 2014, p. 21).The communication ways and methods of new

generation vary. The reason of the change is the interaction between technology and human communication.“The growth of new relationships between humans and technology and the emergence of new intergenerational relationships struggles over new forms of knowledge and democracy and the intensification of radical economic and social inequalities.” (Facer, 2011, p. 7).Communication difficulties can occur according to the instance and flow of technology usage. Smooth and instant message flow will be obtained in the future by advancements.“Never technologies need to support the creation of valid automated and adaptive assessment tools, both formative and summative, at lower cost. These technologies should also support and facilitate the process of grading marking and the inclusion of relevant feedback.” (Shattuck, 2014, p. 35).Access to technology will become easier as technology costs fall. Technological hardware in the academic field willbecome accessible more quickly.“The use of social networking technologies is evident in a number of ways within higher education pedagogies. As part of suite of possibilities in Web 2.0, Facebook is used in a number of ways to support communications within and between institutions and their students as well as a mechanism for teaching and learning within specific units of study.” (Wankel, 2012). Social network society has changed over years. This changing process has developed by new technological devices. Every year, new applications are adapted to the technology. “Introductions, another component to successfully dealing with the emotional side of the learning experience is to appropriately set expectations.” (Quinn, 2012).

Knowledge technology or the technological development is a part of the routine for academic area. Communication – knowledge technology is changing continuously.

Communication-knowledge technology /Type of economy

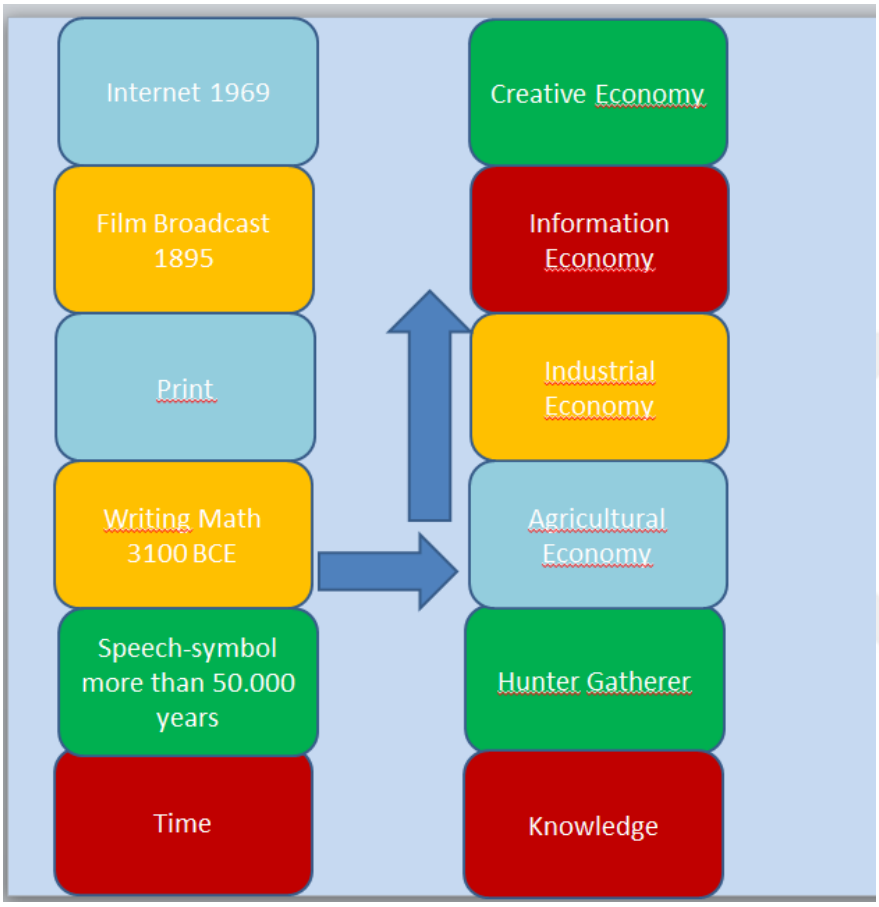


Figure 6

(Hartley, 2012, p. 56). Some of the perspectives have changed with technology but some of them are affected by economic growth. The basis of the system changing along with economic growth is technological growth."Concerns about the increase in the cost of education and the consequences ballooning of student debt have led to increased public scrutiny and the creation or enforcement of more restrictive regulation and policies." (Shattuck, 2014, p. 7).Increase in the cost of education is affected by the technology usage. Researching is very difficult without using technology or the Internet within the research/study area. Communication

technologyand education technology consist an important part of the academic scholarly communication and academic research. The future of the academy may use technology within their scope of area. “A social and cultural expectation that information communication technologies (ICT) should be ubiquitouswithin daily lives is apparent.” (Wankel, 2012).New changes and developments in technology affect the academy. In the next century, Academy of Education and technology will go on producing innovative solutions to exist.

4.11.1. Digital Innovation in Academia

Digital innovation is the part of the academic era. Digitalization is the daily routine of academia. Academicians use digital publishing in academic research and reading processes. Those are the new innovative versions of reading book. Online book reading database is useful for reading a book and you can easily take notes. The process of writing a book is very easy by this digital tool. Academicianscollaborate for book writingprojects by using online book writing web sites, databases, tablets and Apple applications. Those are the new scholarly communication processes in academia.Digital innovation is a part of people’s daily lives but the changing and transforming thing is the digitalization of the 21st century education system daily routine. Digital innovation is integrated by all areas in academia day by day. Academic perspective is not an alone process to people who communicate with each other directly and every day. Digital environment is changingthe face of academic scholarly communication process. And the name of the new platform of the academic scholarly communication is digital platform, and people communicate with each other using digital tools.

5. RESEARCH OUTCOMES, INTERPRATION OF FINDINGS

McKee said that about web technologies researchers' work can be integrity of their relationship to research partners and study participants. With online and other surveillance techniques, researcher personal knowledge can be analyzed. (McKee, 2007, p. 337). Analyzing is the main part of the thesis. The new technologies and changing perspectives of academic scholarly communication area were found.

A Likert scale measures the extent to which a person agrees or disagrees with the question. The most common scale is 1 to 5. Often the scale will be 1=strongly disagree, 2=disagree, 3=not sure,4=agree, and 5=strongly agree. (Howard, 2010). Likert scale is the part of the research to understand the people who join the survey. Since likert scale questions most often range from 1 to 5, optical mark scanning sheet can be used for data entry. If we have a survey consisting of 20 Likert scale questions, an SPSS program to read in the data and produce frequencies would be this. (Howard, 2010).

5.1. Population and Sample

"The world wide social media network which emerged as a product of the digital revolution, nowadays, ordinary life business, academic and political studies is one of the most important concepts." (Eraslan, 2015, p. 471). People, Communication, Information Retrieval, purchasing, decision making, making friends, research, political discourse, agenda-setting, information sharing needs, such as human behavior and longer conducts are all about the digital technologies. Research sampling group consisted of academicians who live in Turkey and the big metropolis of Istanbul. "The first step in sampling is to define the population

of interest clearly and accurately.Such definition may seem obvious to a novice, but it is where survey designcan all too easily be defective." (Sapsford, 2006, p. 27).150.886 academicias are active in Turkey at different Universities. According to figures in Turkey 2016; 158.800 academicians are actively engaged in the task. These scholars who serve in the Metropolitan region actively uses technology. Academicians are selected from 6 different Universities in Istanbul and in-depth analysis and survey questionnaires were conducted with them. Then, 30 academicians were selected for in-depth analysis who uses education technologies at a high level.

"The objective will be to obtain estimates of population parameters,and some methods will do this more accurately than others. The choice of method will be a question of balancing accuracy against cost and feasibility. The methods available fall into two main categories: probabilistic sampling and non-probabilistic sampling. *Probabilistic sampling* includes simple random sampling, stratified random sampling and, if selection is at least in part random, cluster sampling. The most widely used method of *non-probabilistic sampling* is quota sampling." (Sapsford, 2006, p. 29). Research sampling is using non-probabilistic sampling. Scholarly communication area is very big but this area is divided into two parts. "Scholarly communication and scientific collaboration has some levels, and these are;

1. Local: University, inter-university, industry.
2. Global: Individual, institutional." (Edward, 2011, p. 159-161).

This local research in Turkey includes different universities in Istanbul. 2 of them are state universities and 3 of them are private universities. The research has two phases. First of it is the survey and the SPSS analysis. Second one is the in-depth analysis. At the end of the survey, high-level users of technology,who were 30 people, participated the in-depth analysis.

5.2. Pilot Research Survey Question

The first survey is the pilot survey for the research. It was conducted in ITICAM "International Conference of Media and New Technologies" in Russia. Three hundred academicians joined the conference who camefrom different countries. Fifty academicians joined the scholarly communication and education technology survey. They answered the questions and gave idea for the final survey. Final survey was completed according to the answers of these academicians.

Pilot Survey Question

Title :Institution's Name :

Age : Gender :

1. Do you use social media in your scholarly communication process?

a. Yes

b. No

2. What kind of content are you sharing on social media?

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3. Are you conducting collaborative research or academic co-authoring with other scholars, using social media?

a. Yes (Please give details on your research/writing)

b. No

4. Which kind of content is convenient for you?

a. New publications (articles, e-book, other).

b. Career news, job openings.

c. Scientific collaboration web sites and scientific associations.

d. Conferences.

e. New study areas.

f. New projects and new project-groups in other countries.

g. Other scientists and collaboration partners.

5. “Social media (LinkedIn, Facebook, Twitter, etc.) is useful and important for education in 21st century.” Do you agree with this sentence? Please indicate why or why not!

5.3. Findings

5.3.1. Statistical Analysis

Frequencies

Table 2

Frequencies - age

N	Valid	302
	Missing	0
Mean		43,2616
Std. Deviation		10,44275
Minimum		25,00
Maximum		67,00

The average age was found as 43.2616. The average age of of 302 participants was found as 41,5000.

Table 3

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25,00	1	,3	,3	,3
	26,00	4	1,3	1,3	1,7
	27,00	4	1,3	1,3	3,0

28,00	6	2,0	2,0	5,0
29,00	6	2,0	2,0	7,0
30,00	9	3,0	3,0	9,9
31,00	7	2,3	2,3	12,3
32,00	10	3,3	3,3	15,6
33,00	10	3,3	3,3	18,9
34,00	6	2,0	2,0	20,9
35,00	23	7,6	7,6	28,5
36,00	12	4,0	4,0	32,5
37,00	10	3,3	3,3	35,8
38,00	16	5,3	5,3	41,1
39,00	12	4,0	4,0	45,0
40,00	4	1,3	1,3	46,4
41,00	11	3,6	3,6	50,0
42,00	10	3,3	3,3	53,3
43,00	10	3,3	3,3	56,6
44,00	6	2,0	2,0	58,6
45,00	14	4,6	4,6	63,2
46,00	7	2,3	2,3	65,6
47,00	7	2,3	2,3	67,9

48,00	8	2,6	2,6	70,5
49,00	4	1,3	1,3	71,9
51,00	2	,7	,7	72,5
52,00	8	2,6	2,6	75,2
53,00	7	2,3	2,3	77,5
54,00	2	,7	,7	78,1
55,00	13	4,3	4,3	82,5
56,00	11	3,6	3,6	86,1
57,00	4	1,3	1,3	87,4
58,00	9	3,0	3,0	90,4
59,00	5	1,7	1,7	92,1
60,00	4	1,3	1,3	93,4
61,00	7	2,3	2,3	95,7
62,00	3	1,0	1,0	96,7
63,00	3	1,0	1,0	97,7
65,00	3	1,0	1,0	98,7
66,00	2	,7	,7	99,3
67,00	2	,7	,7	100,0
Total	302	100,0	100,0	

Ages of participant vary between 25 and 67, and the number of people attended the related interval is not regular. Most participation is in the age 33 and they are 23 persons. Others are as below;

43 or older 2 persons, 42 or younger 1 person and only one person is 25. In the following tables, participants will be analyzed according to different contents of the study.

Table 4

Statistics

		University	Üni-name	Title	Age2
N	Valid	302	302	302	302
	Missing	0	0	0	0

.

302 participants joined the survey and details were entered to the program without any data loss.

Table 5

Üniv_Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Private University	111	36,8	36,8	36,8
	State University	191	63,2	63,2	100,0
	Total	302	100,0	100,0	

University distribution tables regarding to its kind show that 111 of 302 participants joined the survey from foundation and 191 of 302 from state universities.

Table 6

Uni- Name

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A University	42	13,9	13,9	13,9
	B University	105	34,8	34,8	48,7
	C University	24	7,9	7,9	56,6
	D University	45	14,9	14,9	71,5
	E University	52	17,2	17,2	88,7
	F University	34	11,3	11,3	100,0
	Total	302	100,0	100,0	

Above table shows the resercher distribution according to their workplaces. Most participation came from P University with 115 and lowest by Y University with 24.

Table 7

Demographics

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Man	140	46,4	46,4	46,4
	Woman	162	53,6	53,6	100,0
	Total	302	100,0	100,0	

Distribution of gender is 140 of 302 is men and 162 of 302 is woman; percentage ratio is as 46.3% vs. 53.6%.

Table 8

Title

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Res. Asis.	32	10,6	10,6	10,6
	Lecturer	44	14,6	14,6	25,2
	Dr.	20	6,6	6,6	31,8
	Asistant Prof.	65	21,5	21,5	53,3
	Associate Prof.	95	31,5	31,5	84,8
	Prof. Dr.	46	15,2	15,2	100,0
	Total	302	100,0	100,0	

While looking at the title of participants, it is seen that most participation came from Associate Professor which is equal to 95 persons andthe ratio of 31.5%.

Table 9

Question 1- LMS

S_1_LMS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	133	44,0	44,0	44,0
	No	169	56,0	56,0	100,0
	Total	302	100,0	100,0	

Learning management system users are 133 persons, and 169 of 302 do not use the system. Ratio is as 44% and56%.

Table 9

Question 2- Pearson Oxford

S1_2_Pearson-Oxford

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	117	38,7	38,7	38,7
	No	185	61,3	61,3	100,0
	Total	302	100,0	100,0	

Users of Pearson-Oxford and similar publisher databases are 117 and non-users are 185. This is equal to 38.7% vs. 61.3%.

Table 10

Question 3- Facebook

S1_3_Facebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	240	79,5	79,5	79,5
	No	62	20,5	20,5	100,0
	Total	302	100,0	100,0	

Facebook users as social media are 240 where non-users are 62. This is figuring as 79.5% vs. 20.5%.

Table 11

Question 4- Linkedin

S1_4_Linkedin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	171	56,6	56,6	56,6
	No	131	43,4	43,4	100,0
	Total	302	100,0	100,0	

Linkedin users are 171 where non-users are 131. This is figuring as 56.6% vs. 43.4%.

Table 12

Question 5- Twitter

S1_5_Twitter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	140	46,4	46,4	46,4
	No	162	53,6	53,6	100,0
	Total	302	100,0	100,0	

Twitter users as social media are 140 where non-users are 162. This is figuring as 46.4% vs. 53.6%.

Table 13

Question 6- Academia

S1_6_Academia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	85	28,1	28,1	28,1
	No	217	71,9	71,9	100,0
	Total	302	100,0	100,0	

Academia.edu site users are 85 where non-users are 217. This is figuring as 28.1% vs. 71.9%.

Table 14

Question 7- Instagram

S1_7_Instagram

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	76	25,2	25,2	25,2
	No	225	74,5	74,5	99,7
	3,00	1	,3	,3	100,0
	Total	302	100,0	100,0	

Instagram users are 76 where non-users are 225. This is figuring as 25.2% vs. 74.5%.

Table 15

Question 8- Itunes

S1_8_Itunes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	45	14,9	14,9	14,9
	No	256	84,8	84,8	99,7
	3,00	1	,3	,3	100,0
	Total	302	100,0	100,0	

I-Tunes users are 45 where non-users are 256. This is figuring as 14.9% vs. 84.8%.

Table 16

Question 9- Google Play

S1_9_GooglePlay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	10,9	10,9	10,9
	No	268	88,7	88,7	99,7
	4,00	1	,3	,3	100,0
	Total	302	100,0	100,0	

Google Play users are 33 where non-users are 268. This is figuring as 10.9% vs. 88.7%.

Table 17

Question 10- Youtube

S1_10_Youtube

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	149	49,3	49,3	49,3
	No	153	50,7	50,7	100,0
	Total	302	100,0	100,0	

You Tube users are 149 where non-users are 153. This is figuring as 49.3% vs. 50,7%.

Table 18

Question 11- Blogs

S1_11_Blogs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	119	39,4	39,4	39,4
	No	183	60,6	60,6	100,0
	Total	302	100,0	100,0	

Blog users are 119 where non-users are 183. This is figuring as 39.4% vs. 60.6%.

Table 19

Question 12- Wikis

S1_12_Wikis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	65	21,5	21,5	21,5
	No	237	78,5	78,5	100,0
	Total	302	100,0	100,0	

Wiki users are 65 where non-users are 237. This is figuring as 21,5% vs. 78,5%.

Table 20

Question 13- Other

S1_13_Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Evet	6	2,0	2,0	2,0
	Hayır	296	98,0	98,0	100,0
	Total	302	100,0	100,0	

Other education technology users are 6 where non-users are 296.

Table 21

Question 1- Learning Management System

S2_1_Learning Management System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	76	25,2	25,2	25,2
	No	226	74,8	74,8	100,0
	Total	302	100,0	100,0	

Content management provider universities are 76 where non-providers are 226. This is figuring as 25.2% vs. 74.8%.

Table 22

Question 2 – Publishers Data Base

S2_2_Publishers Data Base

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	67	22,2	22,2	22,2
	No	235	77,8	77,8	100,0
	Total	302	100,0	100,0	

Access to provider Universities for publisher databases are 67 where non-providers are 235. This is figuring as 22.2% vs. 77.8%.

Table 23

Question 2 – Open Source Data Base

S2_3_Open Source Data Base

		Frequency	Percent	Valid Percent	Cumulative Percent
Vald	Yes	63	20,9	20,9	20,9
	No	239	79,1	79,1	100,0
	Total	302	100,0	100,0	

Access provider Universities for open sources are 63 where non-providers are 239. This is figuring as 20.9% vs. 79.1%.

Table 24

Question 2 – Digital Board

S2_4_Digital Board

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	42	13,9	14,0	14,0
	No	259	85,8	86,0	100,0
	Total	301	99,7	100,0	
Missing	System	1	,3		
Total		302	100,0		

Smart Board provider Universities are 42 where non-providers are 259. This is figuring as 13.9% vs. 85.8%.

Table 25

Question 2- Computer

S2_5_Computer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Evet	265	87,7	87,7	87,7
	Hayır	37	12,3	12,3	100,0
	Total	302	100,0	100,0	

Personal computer provider Universities are 265 where non-providers are 37. This is figuring as 87.7% vs. 12.3%.

Table 26

Question 2- Internet

S2_6_Internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	230	76,2	76,2	76,2
	No	72	23,8	23,8	100,0
	Total	302	100,0	100,0	

Internet service provider Universities are 230 where non-providers are 72. This is figuring as 76.2% vs. 23.8%.

Table 27

Question 2 - Youtube

S2_7_Youtube

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Evet	145	48,0	48,0	48,0
	Hayır	157	52,0	52,0	100,0
	Total	302	100,0	100,0	

You Tube access provider Universities are 145 where non-providers are 157. This is figuring as 48% vs. 52%.

Table 28

Question 2- Wide Bandwidth

S2_8_Wide Bandwidth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	12,3	12,3	12,3
	No	265	87,7	87,7	100,0
	Total	302	100,0	100,0	

Wide band internet provider Universities are 37 where non-providers are 265. This is figuring as 12.3% vs. 87.7%.

Table 29

Question 2 – Technology Labratory

S2_9_Technology Labaratory

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	39	12,9	12,9	12,9
	No	263	87,1	87,1	100,0

	Total	302	100,0	100,0	

Technology laboratory provider Universities are 38 where non-providers are 263. This is figuring as 12.9% vs. 87.1%.

Table 30

Question 2 – Online Library

S2_10_Online Library

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	99	32,8	32,8	32,8
	No	203	67,2	67,2	100,0
	Total	302	100,0	100,0	

Online Library provider Universities are 99 where non-providers are 203. This is figuring as 32.8% vs. 67.2%.

Table 31

Question 2- Laptop

S2_11_Laptop

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Yes	153	50,7	50,7	50,7
	No	149	49,3	49,3	100,0
	Total	302	100,0	100,0	

Laptop provider Universities are 153 where non-providers are 149. This is figuring as 50.7% vs. 49.3%.

Table 32

Question 2 - Tablet

S2_12_Tablet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	83	27,5	27,5	27,5
	No	218	72,2	72,2	99,7
	22,00	1	,3	,3	100,0
	Total	302	100,0	100,0	

Tablet provider Universities are 83 where non-providers are 218. This is figuring as 27.5% vs. 72.2%.

Table 33

Question 2 - Progection

S2_13_Progection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	194	64,2	64,2	64,2
	No	108	35,8	35,8	100,0
	Total	302	100,0	100,0	

Projection device provider Universities are 194 where non-providers are 108. This is figuring as 64.2% vs. 35.8%.

Table 34

Question 2 - Other

S2_14_Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	1,3	1,3	1,3
	No	297	98,3	98,3	99,7
	4,00	1	,3	,3	100,0
	Total	302	100,0	100,0	

Other technological instruments provider Universities are 4 where non-providers are 297. This is figuring as 1.3% vs. 98.3%.

Table 35

Age 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	161	53,3	53,3	53,3
	2,00	141	46,7	46,7	100,0
	Total	302	100,0	100,0	

Number of participants in;

43 age and older are 161

42 age and younger are 141

Age variable is collected under two different main groups.

Valid 1: 43 and older.

Valid 2: 42 and younger.

Reliability Test

Table 4 – Reliability

Confidence test was done for twice and the survey's trustworthiness which is the value of KMO and Bartlett Test is well suit.

While comments have been made upon this test iro Beril Durmuş's view below marks has been considered.

Table 36 KMO Value Test

KMO Value	Comment
0,80 and above	Perfect
0,70 - 0,80	Good
0,60 - 0,70	Average
0,50 - 0,60	Worse
0,50 and below	Unacceptable

Table 37

Age Variable

Case Processing Summary

		N	%
Cases	Valid	302	100,0
	Excluded[a]	0	,0
	Total	302	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,871	25

Results show that 0,871 passed the reliability threshold and it is perfect.

Factor Analysis

In this phase of SPSS,Kaiser-Meyer-Olkin(KMO) and Bartletts test of sphericityresults will be examined. Before starting to factor analysis there should be some correlation between variables.

The reason for conducting factor analysis is to test the sample size. Sample size test has returned with high values so by the way factor analysis test is done.

Table 38 KMO Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,866
Bartlett's Test of Sphericity	Approx. Chi-Square	3226,058
	df	300
	Sig.	,000

It is seen that conducting factor analysis test to variables is suitable according to high Adequacy- KMO value which is equal to 0,866.

Barlett test shows us if there is sufficient relationship between variables. There is adequate relationship to have the factor analysis test between variables if test result is below 0,05. If the result of the test is pointless it is not convenient to make factor analysis test.

Table 39

Communalities Sig Test

It is adequate due to Sig. ,000 .

Communalities

	Initial	Extraction
S4_1	1,000	,664
S4_2	1,000	,642
S4_3	1,000	,738
S4_4	1,000	,783
S4_5	1,000	,717
S4_6	1,000	,592
S4_7	1,000	,579
S4_8	1,000	,703
S4_9	1,000	,575
S4_10	1,000	,508

S4_11	1,000	,754
S4_12	1,000	,701
S4_13	1,000	,743
S4_14	1,000	,597
S4_15	1,000	,619
S4_16	1,000	,661
S4_17	1,000	,655
S4_18	1,000	,726
S4_19	1,000	,700
S4_20	1,000	,580
S4_21	1,000	,526
S4_22	1,000	,582
S4_23	1,000	,674
S4_24	1,000	,707
S4_25	1,000	,631

Referring to the above table, questions of the acceptability results according to KMO and Bartlett tests are evaluated as;

S4 1-2 -15-16-23-25 Average

S4 - 3-4-5-8-11-12-13-18-19-24 Good

S4 6-7- 9-10-14-20-21- Worse

Table 40

Total Varience

Total Variance Explained

Componen t	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	7,722	30,888	30,888	7,722	30,888
2	2,179	8,715	39,604	2,179	8,715
3	1,643	6,573	46,177	1,643	6,573
4	1,530	6,121	52,298	1,530	6,121
5	1,213	4,852	57,150	1,213	4,852
6	1,053	4,214	61,363	1,053	4,214
7	1,017	4,070	65,433	1,017	4,070
8	,928	3,711	69,145		
9	,836	3,346	72,490		
10	,741	2,965	75,455		
11	,716	2,864	78,319		
12	,674	2,695	81,014		
13	,555	2,219	83,233		
14	,533	2,131	85,364		
15	,502	2,010	87,374		

16	,449	1,794	89,168		
17	,397	1,586	90,754		
18	,389	1,558	92,312		
19	,353	1,412	93,723		
20	,343	1,372	95,096		
21	,287	1,149	96,245		
22	,273	1,093	97,337		
23	,258	1,033	98,370		
24	,224	,898	99,268		
25	,183	,732	100,000		

25 questions located within question 4 were re-defined and entered to SPSS. They were grouped and 7 factors arised. By the way, questions within same groupwill be called with same factor.

Table 41

Total Varience 2

Total Variance Explained

Component	Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	30,888	3,471	13,882	13,882

2	39,604	3,259	13,034	26,916
3	46,177	2,771	11,083	37,999
4	52,298	2,241	8,963	46,962
5	57,150	2,093	8,371	55,333
6	61,363	1,285	5,142	60,475
7	65,433	1,240	4,958	65,433

Firstly, the analysis of the total varience was explained and then rotated compnonent matrix.

Table 42

Component Matrix

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
S4_4	,853	,075	,026	,165	-,014	,058	,137
S4_3	,774	,131	,218	,239	,094	,039	,083
S4_5	,700	,296	,038	,280	,165	-,082	,157
S4_1	,588	,152	,243	-,177	,316	,238	-,221
S4_6	,538	,179	,112	,154	,408	-,205	,159
S4_2	,484	,302	,133	-,081	,478	,217	-,129
S4_17	,150	,780	,120	-,019	,070	-,006	,063
S4_18	,132	,775	,264	,105	,111	-,113	,045
S4_19	,064	,737	,238	,175	,111	-,231	,016

S4_16	,179	,615	,055	,216	-,021	,435	-,107
S4_15	,252	,559	,054	,228	,124	,399	,115
S4_21	,088	,469	,361	,035	,096	-,237	,318
S4_24	,160	,238	,780	,022	,056	,092	,067
S4_23	,115	,125	,765	,095	,188	-,127	,006
S4_25	-,039	,131	,702	,328	,052	,017	,093
S4_22	,239	,166	,656	,205	,152	-,005	,051
S4_11	,215	,145	,238	,787	,038	,005	-,092
S4_12	,175	,090	,237	,772	,042	-,034	,082
S4_9	,399	,160	,113	,441	,357	-,143	,185
S4_8	,217	,102	,120	,009	,790	-,060	,054
S4_10	-,048	,109	,104	,330	,586	,166	,059
S4_7	,469	-,041	,253	-,051	,537	,013	-,045
S4_20	-,006	-,132	-,050	-,086	,046	,729	,139
S4_13	,174	,029	,148	-,018	-,009	,209	,804
S4_14	,050	,351	,012	,431	,232	-,069	,477

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 11 iterations.

Factor weights of questions were considered while determining the questions lying under factors. Question lies under specific factor where it has the highest factor weight. Regarding to rotated component analysis;

Factor 1

S4 – 4-3-5-1-6-2. Questions consist

Factor 2

S4 – 17-18-19-16-15-21. Questions consist

Factor 3

S4 – 24-23-25-22. Questions consist

Factor 4

S4 – 11-12-9

Factor 5

S4- 8-10-7

Factor 6

S4-20

Factor 7

S4 – 13-1

Table 43

Component Transformation Matrix

Component	1	2	3	4	5	6	7
1	,537	,501	,437	,348	,356	,015	,148
2	,656	-,432	-,355	-,268	,346	,238	-,093
3	,029	,726	-,510	-,318	-,135	,305	-,021
4	-,147	,090	,532	-,717	,272	,037	-,313
5	-,015	-,160	,324	,048	-,324	,845	,220
6	-,486	-,019	-,178	,087	,726	,231	,379
7	,150	-,035	,066	-,426	-,172	-,285	,824

While looking over to general of 7factors, test has been invalid due to 6.factor's consisting only one question. Because of that test was done again by extracting the 20^{th}question.

Table 44

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,866
Bartlett's Test of	Approx. Chi-Square	3226,058

Sphericity	df	300
	Sig.	,000

Table 45

Rotated Component Matrix

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
S4_4	,853	,075	,026	,165	-,014	,058	,137
S4_3	,774	,131	,218	,239	,094	,039	,083
S4_5	,700	,296	,038	,280	,165	-,082	,157
S4_1	,588	,152	,243	-,177	,316	,238	-,221
S4_6	,538	,179	,112	,154	,408	-,205	,159
S4_2	,484	,302	,133	-,081	,478	,217	-,129
S4_17	,150	,780	,120	-,019	,070	-,006	,063
S4_18	,132	,775	,264	,105	,111	-,113	,045
S4_19	,064	,737	,238	,175	,111	-,231	,016
S4_16	,179	,615	,055	,216	-,021	,435	-,107
S4_15	,252	,559	,054	,228	,124	,399	,115
S4_21	,088	,469	,361	,035	,096	-,237	,318
S4_24	,160	,238	,780	,022	,056	,092	,067
S4_23	,115	,125	,765	,095	,188	-,127	,006

S4_25	-,039	,131	,702	,328	,052	,017	,093
S4_22	,239	,166	,656	,205	,152	-,005	,051
S4_11	,215	,145	,238	,787	,038	,005	-,092
S4_12	,175	,090	,237	,772	,042	-,034	,082
S4_9	,399	,160	,113	,441	,357	-,143	,185
S4_8	,217	,102	,120	,009	,790	-,060	,054
S4_10	-,048	,109	,104	,330	,586	,166	,059
S4_7	,469	-,041	,253	-,051	,537	,013	-,045
S4_20	-,006	-,132	-,050	-,086	,046	,729	,139
S4_13	,174	,029	,148	-,018	-,009	,209	,804
S4_14	,050	,351	,012	,431	,232	-,069	,477

Table 46

Component Transformation Matrix

Component Transformation Matrix

Componen t	1	2	3	4	5	6	7
1	,537	,501	,437	,348	,356	,015	,148
2	,656	-,432	-,355	-,268	,346	,238	-,093
3	,029	,726	-,510	-,318	-,135	,305	-,021
4	-,147	,090	,532	-,717	,272	,037	-,313
5	-,015	-,160	,324	,048	-,324	,845	,220

6	-,486	-,019	-,178	,087	,726	,231	,379
7	,150	-,035	,066	-,426	-,172	-,285	,824

Factor Analysis

The 20th question reverted opposite and so alternatives are converted from

1 Never agree

2 Not agree

3 Not sure

4 Agree

5 Absolutely agree

To

1 Absolutely agree

2 Agree

3 Not sure

4 Not agree

5 Never agree

And factor analysis has re taken.

Table 47

KMO Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,866
Bartlett's Test of Sphericity	Approx. Chi-Square	3226,058
	df	300
	Sig.	,000

Table 48

Rotated Component Matrix

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
S4_4	,853	,075	,026	,165	-,014	-,058	,137
S4_3	,774	,131	,218	,239	,094	-,039	,083
S4_5	,700	,296	,038	,280	,165	,082	,157
S4_1	,588	,152	,243	-,177	,316	-,238	-,221
S4_6	,538	,179	,112	,154	,408	,205	,159
S4_2	,484	,302	,133	-,081	,478	-,217	-,129
S4_17	,150	,780	,120	-,019	,070	,006	,063

S4_18	,132	,775	,264	,105	,111	,113	,045
S4_19	,064	,737	,238	,175	,111	,231	,016
S4_16	,179	,615	,055	,216	-,021	-,435	-,107
S4_15	,252	,559	,054	,228	,124	-,399	,115
S4_21	,088	,469	,361	,035	,096	,237	,318
S4_24	,160	,238	,780	,022	,056	-,092	,067
S4_23	,115	,125	,765	,095	,188	,127	,006
S4_25	-,039	,131	,702	,328	,052	-,017	,093
S4_22	,239	,166	,656	,205	,152	,005	,051
S4_11	,215	,145	,238	,787	,038	-,005	-,092
S4_12	,175	,090	,237	,772	,042	,034	,082
S4_9	,399	,160	,113	,441	,357	,143	,185
S4_8	,217	,102	,120	,009	,790	,060	,054
S4_10	-,048	,109	,104	,330	,586	-,166	,059
S4_7	,469	-,041	,253	-,051	,537	-,013	-,045
S4_20_Duz	,006	,132	,050	,086	-,046	,729	-,139
S4_13	,174	,029	,148	-,018	-,009	-,209	,804
S4_14	,050	,351	,012	,431	,232	,069	,477

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 11 iterations.

After the test was completed, the 20th Question has still remained alone. So this question is extracted from the factor analysis.

Table 49

Component Transformation Matrix

Component Transformation Matrix

Component	1	2	3	4	5	6	7
1	,537	,501	,437	,348	,356	-,015	,148
2	-,656	,432	,355	,268	-,346	,238	,093
3	-,029	-,726	,510	,318	,135	,305	,021
4	-,147	,090	,532	-,717	,272	-,037	-,313
5	,015	,160	-,324	-,048	,324	,845	-,220
6	-,486	-,019	-,178	,087	,726	-,231	,379
7	,150	-,035	,066	-,426	-,172	,285	,824

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Factor Analysis

After getting out the 20thquestion there were some changes occurred in tables and factor analysis results.

Table 49

KMO Bartlett's Test Getting Out 20. Question

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,868
Bartlett's Test of Sphericity	Approx. Chi-Square	3193,634
	df	276
	Sig.	,000

Regarding to the repeated KMO ve Bartlett's test results which is 0,868, it is shown that variables are in perfect suitability for factor analysis.

S4 – 13 Perfect

S4 1-2- 6-7-9- 14- 16- 17 -23-24-25 Average

S4 3-4-5-8-11-12-18- 19- Good

S4 – 21- 22-Worse

S4 10 – Not Acceptabl

Table 50

Rotated Component Matrix Getting Out 20. Question

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
S4_4	,861	,036	,041	,113	,003	,163	,112

S4_3	,749	,053	,236	,198	,123	,229	,101
S4_5	,737	,329	,036	,246	,159	,100	,077
S4_6	,580	,298	,103	,141	,401	-,084	,065
S4_1	,483	-,047	,266	-,212	,361	,433	-,121
S4_9	,453	,264	,102	,435	,340	-,069	,092
S4_19	,104	,813	,209	,180	,076	,105	-,097
S4_18	,132	,761	,242	,104	,092	,265	-,010
S4_17	,117	,684	,106	-,023	,063	,390	,059
S4_21	,119	,576	,338	,047	,078	-,031	,246
S4_24	,147	,231	,772	,010	,053	,138	,060
S4_23	,100	,178	,761	,099	,198	-,020	,001
S4_25	-,035	,147	,695	,332	,043	,042	,092
S4_22	,212	,150	,657	,200	,167	,116	,067
S4_11	,225	,082	,246	,774	,033	,170	-,089
S4_12	,182	,050	,244	,771	,043	,104	,097
S4_8	,149	,082	,119	,033	,820	,085	,102
S4_7	,450	-,019	,256	-,066	,551	,023	-,057
S4_10	-,004	,134	,080	,328	,534	,051	,008
S4_2	,355	,074	,151	-,094	,528	,503	-,005
S4_16	,083	,274	,063	,188	-,012	,760	,020
S4_15	,168	,274	,057	,208	,132	,662	,224
S4_13	,154	-,016	,143	-,011	,003	,098	,867

S4_14	,057	,352	-,003	,454	,222	,093	,476

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 10 iterations.

Table 51

Component Transformation Matrix Getting Out 20. Question

Component Transformation Matrix

Component	1	2	3	4	5	6	7
1	,514	,438	,432	,329	,360	,313	,144
2	-,622	,508	,326	,292	-,399	-,020	,071
3	-,003	-,487	,556	,341	,115	-,569	-,007
4	-,223	,080	,517	-,713	,297	,075	-,272
5	,209	-,396	,359	-,127	-,623	,485	,179
6	-,154	-,024	-,006	-,243	,197	-,102	,931
7	-,482	-,386	-,044	,326	,428	,572	-,033

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Below outcomes show the factor analysis results

Factor 1

S4 – 4-3-5-6-1-9

Factor 2

S4 – 19-18-17-21

Factor 3

S4 – 24-23-25-22

Factor 4

S4- 11-12

Factor 5

S4- 8-7-10-2

Factor 6

S4- 16-15

Factor 7

S4 13-14

Table 52

Factor Analysis Results

Factor Name	**Question**	**Factor Weight**	**Factor Expressiveness**	**Confidence**
Usage for education	4. I use education technologies to scholarly communicate	4.0,795 3.0,736 5.0,755 6.0,627 1. 0,683	13,539	

	and to support education process. 3. I use social media to scholarly communicate and to support education process. 5. I use social media in the processes of scholarly communication. 6. I share my scientific publications on social media. 1. I think that the technological	9.0,604		0,841

	infrastructure at the university I work for supports high level technology literacy. 9. I sharethe announcements of new conferences on social media.			
Education technologies andusing social media	19. I follow the new working groups and project groups that are announced on social media. 18. I follow the new research interests and the social media	19. 0,773 18.0,745 17. 0,653 21.0,530	11,483	0,814

	accounts of the academicians who are working in my field. 17. I follow conference announcements on social media. 21. I think that social media feels the public pulse and the pulse of the masses with its users and comments.			
Following social media and sharings on it	24. I think that social media is an important education technology for	24.0,697 23.0,670 25.0,628 22.0,585	11,353	

	myself and my students in reachingthe announcements of new projects, conferences and publications. 23. I use social mediafor communicating with my students and knowledge sharing. 25. I think thatshares on social media are reliable. 22. I think that social media gives up-to-date and accurate			0,804

	information thus I think that I can follow the latest developments easily.			
Communication with other academicians	11. I use social media for communicating with the academicians I do not know. 12. I use social media for meeting academicians I do not know and doing joint studies with them.	11.0,755 12.0,712	9,055	0,821
Technological opportunities that the	8. I can give lectures from home thanks to	8.0,773 7.0,580 10.0,421	8,971	

universityprovides	distance education. 7. I think that the technological infrastructure at the university I work for supports high level technology literacy. 10. I share the latest developments and academic information at our university on social media. 2. I can plan some of my courses as distance	2.0,696		0,589

	education.			
Following the news	16. I follow thewebsites of scientific publications and institutions and the pages of associations. 15. I use social media for being up to date and following the news.	16.0,699 15.0,655	7,893	0,705
Following career opportunities	13. I use social media for finding new broadcast media and following the latest developments in my field. 14. I follow new	13.0,806 14.0,617	5,028	0,270

	career opportunities and employment opportunities on social media.			
		Total	67,322	

Kaiser Mayer Olkin Scale Acceptability: 0,868

Bartlett Global Test : 67.230

Sd: 276

P Values: 0,000

As it is figured in factor analysis table,the 4thQuestion is consisted of 25 questions including 5 different assessment classes. Questions are grouped under 7 factor titles while excluding the 20th Question. Acceptability test of these questions and factor analysis results are highly appeared. For further analysis, questions are grouped under mentioned factors. KMO acceptability of questions is 0.868, where it is above 0.80 and perfect.

Reliability (Acceptability tables conducted for each question)

Acceptability test results are as below,

Reliability

Table 53

Reliability (S4-4-S4-9)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_4	16,3013	21,507	,688	,802
S4_3	16,4305	20,611	,743	,790
S4_5	16,4834	20,676	,731	,793
S4_6	16,7517	21,563	,603	,818
S4_1	17,0728	22,447	,444	,853
S4_9	16,4636	22,362	,542	,829

Acceptability results of first factor's questions S4 4-3-5-6-1-9 pan out by 0.841 which indicates the "Education Usage Purpose". Confidence result of each question is given in Corrected Item Total Correlation.

Table 54

Reliability (S4-19 – S4-21)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_19	11,0497	7,635	,704	,732
S4_18	10,9735	7,807	,733	,718
S4_17	10,9007	8,575	,605	,780
S4_21	11,0430	9,609	,502	,823

Acceptability results of second factor's questions S4 19-18-17-21 pan out by 0.814 which indicates the "Education Technologies Social Media Usage". Confidence result of each question is given in Corrected Item Total Correlation.

Table 55

Reliability (S4-24-S4 –22)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_24	10,3874	8,577	,637	,748

S4_23	10,3576	7,752	,655	,737
S4_25	10,6854	8,396	,589	,770
S4_22	10,5795	8,470	,599	,765

Acceptability results of third factor's questions S4 24-23-25-22 pan out by 0.804 which indicates the "Social Media Follow-Up". Confidence result of each question is given in Corrected Item Total Correlation.

Table 56

Reliability (S4-11-S4-12)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_11	3,2550	1,539	,696	.
S4_12	3,3079	1,536	,696	.

Acceptability results of fourth factor's questions S4 11.12 pan out by 0.821 which indicates the "Communication With Other Academicians". Confidence result of each question is given in Corrected Item Total Correlation.

Table 57

Reliability (S4-8-S4-2- S4-7-S4-10)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_8	9,3245	15,044	,524	,430
S4_7	9,1954	16,902	,437	,503
S4_10	8,9139	10,783	,280	,717
S4_2	9,6987	15,607	,440	,480

Acceptability results of fifth factor's questions S4 8-7-10-2 pan out by 0.589 which indicates the "Technological Opportunities In University". Confidence result of each question is given in Corrected Item Total Correlation.

Table 58

Reliability (S4-16-S4-15)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_16	3,7980	1,225	,545	.

S4_15	3,8609	1,197	,545	.

Acceptability results of sixth factor's questions S4 16-15 pan out by 0.705 which indicates the "Follow-Up About News". Confidence result of each question is given in Corrected Item Total Correlation.

Table 59

Reliability (S4-13- S4-14)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S4_13	3,4305	1,688	,223	.
S4_14	3,7947	10,124	,223	.

Acceptability results of seventh factor's questions S4 13-14 pan out by 0,270 which indicates the "Follow-Up Of Carreer Opportunities". Confidence result of each question is given in Corrected Item Total Correlation. 7. Factor is not used due to its low acceptability ratio.

T-Test

Questions and answers which are grouped into two are analyzed with T Test. These questions are about the University type, Sexuality, Age of participants and the answers given to the S1 and S2 and their breakdown to factors in S4 and comparison/analyzewith 25 questions under 7 grouped factor. According to Beril Durmuş, this test takes part within "Difference Tests". To apply difference test, there should be a classified variable consisting independent discrete sub groups. If the classified variable is consisting of more than two sub groups then ANOVA analysis should be done.(Durmuş, 2013, 117).

University Type T Test

For Table 58 University Type T Test refer to Appendix C;

According to the answers of questions, it is seen that 111 participants are from Foundation University and 191 from State University.

For Table 59 University Type Independent Sample Test 1 and Table 60 University Type Independent Sample Test 2 refer to Appendix C;

H0 Hypothesis: Average for education technology usage in Foundation and State Universities for educational purposes by academicians are the same.

H1 Hypothesis: Average for education technology usage in Foundation and State Universities for educational purposes by academicians are not the same.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.550 and sig value is 0.459. Variances are the same due to the sig's value which is higher than 0.05. As a result of this and in factor 1, answers which are given from State University and Foundation University are not different. So hypothesis H0 is proved.

H0 Hypothesis: Average for willingness for education technologies and technology usage in Foundation and State Universities by academicians are the same.

H1 Hypothesis: Average for willingness for education technologies and technology usage in Foundation and State Universities by academicians are not the same.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0,760 and sig value is 0,384. Variances are the same due to the sig's value which is higher than 0,05. As a result of this in factor 2, answers which are given and not given among State University and Foundation University are not different. So hypothesis H0 is proved.

H0 Hypothesis: Average for social media follow-up and share in Foundation and State Universities by academicians are the same.

H1 Hypothesis: Average for social media follow-up and share in Foundation and State Universities by academicians are not the same.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0,019 and sig value is 0,890. Variances are the same due to the sig's value which is higher than 0,05. As a result of this in factor 3, answers which are given and not given among State University and Foundation University are not different. So hypothesis H0 is proved.

H0 Hypothesis: Average of established connections between different academicians in Foundation and State Universities are the same.

H1 Hypothesis: Average of established connections between different academicians in Foundation and State Universities are not the same.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0,550 and sig value is 0,459. Variances are the same due to the sig's value which is higher than 0,05. As a result of this and in factor 1, answers which are given and not given among State University and Foundation University are not different. So hypothesis H0 is proved.

H0 Hypothesis: Average of opinions remarked about universities technological opportunities by academicians in Foundation and State Universities are the same.

H1 Hypothesis: Average of opinions remarked about universities technological opportunities by academicians in Foundation and State Universities are not the same.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.760 and sig value is 0.384. Variances are the same due to the

sig's value which is higher than 0,05. As a result of this in factor 2, answers which are given and not given among State University and Foundation University are not different. So hypothesis H0 is proved.

H0 Hypothesis: Average of tendency about news followings by academicians in Foundation and State Universities are the same.

H1 Hypothesis: Average of tendency about news followings by academicians in Foundation and State Universities are not the same..

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 13.809 and sig value is 0.000. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given and not given among State University and Foundation University are different. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.04. Hypothesis H0 is rejected.

H0 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user in Foundation and State Universities are the same.

H1 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user in Foundation and State Universities are not the same.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 6.177 and sig value is 0.013. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in S3, answers which are given and not given among State University and Foundation University are different. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.06. Hypothesis H0 is rejected.

Gender T-Test

For Table 61 Group Statistics please refer to Appendix C;

Participants are consisted of 140 men and 162 women.

For Table 62 Group Statistics Independent Sapmles Test 1 and Table 63 Group Statistics Independent Sapmles Test 2 please refer to Appendix C;

H0 Hypothesis: Academician's education technology usage ratio for education purposes doesn't change by sexuality.

H1 Hypothesis: Academician's education technology usage ratio for education purposes changes by sexualty.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.362 and sig value is 0.548. Variances are the same due to the

sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by different sexuality doesn't change among academicians So hypothesis H0 is proved.

H0 Hypothesis: Academician's education technology and social media usage are the same by sexualty.

H1 Hypothesis: Academician's education technology and social media usage are not the same by sexualty.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.760 and sig value is 0.899. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 2; answers which are given by different sexuality doesn't change among academicians So hypothesis H0 is proved.

H0 Hypothesis: Academician's social media follow up and share tendency ratio are the same by sexualty.

H1 Hypothesis: Academician's social media follow up and share tendency ratio are not the same by sexualty.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.034 and sig value is 0.855. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by different sexuality doesn't change among academicians so hypothesis H0 is proved.

H0 Hypothesis: Academician's communication tendency with other academicians are the same by sexualty.

H1 Hypothesis: Academician's communication tendency with other academicians are not the same by sexualty.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.254 and sig value is 0.615. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by different sexuality doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' opinions about university supported technological equipments are the same by sexualty.

H1 Hypothesis: Academicians' opinions about university supported technological equipments are not the same by sexualty.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.001 and sig value is 0.974. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by different sexuality doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news follow up tendency ratio is the same by sexuality.

H1 Hypothesis: Academicians' news follow up tendency ratio is not the same by sexuality.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.74 and sig value is 0.786. Variances are the same due to the sig's value which is higher than 0,05. As a result of this in factor 6, answers which are given by different sexuality doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user by sexuality groups are the same.

H1 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user by sexuality groups are not the same.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.375 and sig value is 0.242. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in S3, answers which are given by sexuality are different. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.728. Hypothesis H0 is rejected.

Age T-Test

For Table 64 Age T-Test please refer to Appendix C;

Participants are located into two main groups according to age analysis whis is under age of 42 and above 43.

For Table 65 Age Independent Sapmles Test 1 and Table 66 Age Independent Sample Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' education technology usage ratio for education purposes doesn't change according to age.

H1 Hypothesis: Academicians' education technology usage ratio for education purposes changes according to age.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 9.203 and sig value is 0.03. Variances are not the same due to the sig's value which is lower than 0,05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' education technology and social media usage tendency are the same according to age.

H1 Hypothesis: Academicians' education technology and social media usage tendency are not the same according to age.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.177 and sig value is 0.146. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by different ages doesn't change among academicians So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media follow up and share tendency ratio are the same according to age.

H1 Hypothesis: Academicians' social media follow up and share tendency ratio are not the same according to age.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 10.029 and sig value is 0.02. Variances are not the same due to the sig's value which is lower than 0,05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.019. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' communication tendency with other academicians are the same according to age.

H1 Hypothesis: Academicians' communication tendency with other academicians are not the same according to age.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.334 and sig value is 0.124. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by different age groups doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' opinions about university supported technological equipments are same according to age.

H1 Hypothesis: Academicians' opinions about university supported technological equipments are not same according to age.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.460 and sig value is 0.498. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by different age groups doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news follow up tendency ratio is the same according to age.

H1 Hypothesis: Academicians' news follow up tendency ratio is not the same according to age.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 9.834 and sig value is 0.06. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 6, answers which are given by different age groups changes among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.02. Hypothesis H0 is rejected.

H0 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user by age groups are the same.

H1 Hypothesis: Average of tendency by academicians about seeing their selfs high tech user by age groups are not the same.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.634 and sig value is 0.202. Variances are same due to the sig's value which is higher than 0.05. As a result of this in S3, answers which are given iro sexuality are different. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.728. Hypothesis H0 is approved.

Learning Management SystemUser T-Test

For Table 67 LMS User T-Test please refer to Appendix C;

The number of people who gave YES anwser to the question "are you using Learning Management System" is 133. No answers are 169.

For Table 68 LMS Independent Samples Test 1 and Table 69 LMS Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' education technology usage ratio varies according to Learning Management System usage.

H1 Hypothesis: Academicians' education technology usage ratio doesn't vary according to Learning Management System usage.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 9.203 and sig value is 0.03. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Learning Management System users among academicians doesn't change. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media usage tendency are the same according to Learning Management System usage.

H1 Hypothesis: Academicians' education technology and social media usage tendency are not the same according to Learning Management System usage.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.702 and sig value is 0.403. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Learning Management System users and non-users do not change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media follow up and share tendency ratio are the same according to Learning Management System users.

H1 Hypothesis: Academicians' social media follow up and share tendency ratio are not the same according to Learning Management System users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 10.029 and sig value is 0.02. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.019. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' communication tendency with other academicians are the same according to Learning Management System users.

H1 Hypothesis: Academicians' communication tendency with other academicians are not the same according to Learning Management System users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.619 and sig value is 0.204. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by Learning Management System users doesn't change among academicians. Hypothesis H0 is proved.

H0 Hypothesis: Academicians' opinions about university supported technological equipments according to Learning Management System users are the same.

H1 Hypothesis: Academicians' opinions about university supported technological equipments according to Learning Management System users are not the same.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 6.237 and sig value is 0.013. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Learning Management System users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news follow up tendency ratio according to Learning Management System users are the same.

H1 Hypothesis: Academicians' news follow up tendency ratio according to Learning Management System users are not the same.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.234 and sig value is 0.629. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Tendency of academicians about seeing their selfs high tech user according to Learning Management System users and non-users are the same.

H1 Hypothesis: Tendency of academicians about seeing their selfs high tech user according to Learning Management System users and non-users are not the same.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.202 and sig value is 0.139. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Learning Management System users and non-users doesn't change. So hypothesis H0 is proved.

T-Test Pearson Oxford

For Table 69 Pearson Oxford T-Test please refer to Appendix C;

The number of people who gave YES answer to the question "are you searching in Pearson Oxford publishing" is 117. No answers are 185.

For Table 70 Pearson Oxford Independent Samples Test 1 and Table 71 Pearson Oxford Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' education technology usage ratio varies according to use of Oxford Pearson Publishing usage.

H1 Hypothesis: Academicians' education technology usage ratio doesn't vary according to use of Oxford Pearson Publishing usage.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.343 and sig value is 0.558. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Oxford Pearson Publishing users among academicians doesn't change. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media usage tendency are same according to Oxford Pearson Publishing usage.

H1 Hypothesis: Academicians' education technology and social media usage tendency are not same according to Oxford Pearson Publishing usage.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.021 and sig value is 0.886. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Oxford Pearson Publishing users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media follow up and share tendency ratio are the same according to Oxford Pearson Publishing users.

H1 Hypothesis: Academicians' social media follow up and share tendency ratio are not the same according to Oxford Pearson Publishing users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.703 and sig value is 0.193. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Oxford Pearson Publishing users doesn't change among academicians. Hypothesis H0 is proved.

H0 Hypothesis: Academicians' communication tendency with other academicians are the same according to Oxford Pearson Publishing user's.

H1 Hypothesis: Academicians' communication tendency with other academicians are not the same according to Oxford Pearson Publishing user's.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.370 and sig value is 0.543. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by Oxford Pearson Publishing usersdoesn't change among academicians. Hypothesis H0 is proved.

H0 Hypothesis: Academicians' opinions about university supported technological equipments according to Oxford Pearson Publishing users are the same.

H1 Hypothesis: Academicians' opinions about university supported technological equipments according to Oxford Pearson Publishing users are not the same.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 6.234 and sig value is 0.013. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Oxford Pearson Publishing users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news follow up tendency ratio according to Oxford Pearson Publishing users are the same.

H1 Hypothesis: Academicians' news follow up tendency ratio according to Oxford Pearson Publishing users are not the same.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.331 and sig value is 0.566. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Oxford Pearson Publishing users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Tendency of academicians about seeing their selfs high tech user according to Oxford Pearson Publishing users are the same.

H1 Hypothesis: Tendency of academicians about seeing their selfs high tech user according to Oxford Pearson Publishing users are not the same.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.641 and sig value is 0.424. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Oxford Pearson Publishing users and non-users doesn't change. So hypothesis H0 is proved.

T-Test Facebook

For Table 72 Facebook T-Test please refer to Appendix C;

The number of people who gave the answer YES to the question “are you using Facebook?” is 240. The number of NO answers is 62.

For Table 73 Facebook Independent Samples Test 1 and Table 74 Facebook Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians’ using education technology tendency ratio are the same according to Facebook users.

H1 Hypothesis: Academicians’ using education technology tendency ratio are not the same according to Facebook users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 7.218 and sig value is 0.008. Variances are not the same due to the sig’s value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.011. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' using education technology and social media follow up and share tendency ratio are the same according to Facebook users.

H1 Hypothesis: Academicians' using education technology and social media follow up and share tendency ratio are not the same according to Facebook users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 6.918 and sig value is 0.009. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.001. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media usage tendency is the same according to Facebook usage.

H1 Hypothesis: Academicians' social media usage tendency is not the same according to Facebook usage.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.130 and sig value is 0.719. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Facebook users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of the tendency to communicate with other academiciansis the same according to Facebook users.

H1 Hypothesis: Academicians' ratio of the tendency to communicate with other academiciansis not the same according to Facebook users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 4.400 and sig value is 0.037. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technologic capabilities tendency is the same according to Facebook usage.

H1 Hypothesis: Academicians' universities capabilities tendency is not the same according to Learning Management System usage.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 6.234 and sig value is 0.013. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Facebook users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency is the same according to Facebook usage.

H1 Hypothesis: Academicians' news following tendency is not the same according to Facebook usage.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.669 and sig value is 0.103. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Facebook users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' technology advanced user tendency is the same according to Facebook usage.

H1 Hypothesis: Academicians'technology advanced user tendency is not the same according to Facebook usage.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.552 and sig value is 0.458. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Facebook users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Linkedin

For Table 75 Linkedin T-Test please refer to Appendix C;

Do you using Linkedin? Yes answer are 171, no answer are 131.

For Table 76 Linkedin Independent Samples Test 1 and Table 77 Linkedin Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians'using education technology to education area tendency ratio are the same according to Linkedin users.

H1 Hypothesis: Academicians'using education technology to education area tendency ratio are not the same according to Linkedin users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 7.863 and sig value is 0.005. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.001. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' education technology and social media follow up and share tendency ratio are the same according to Linkedin users.

H1 Hypothesis: Academicians' education technology and social media follow up and share tendency ratio are not the same according to Linkedin users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 8.123 and sig value is 0.005. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.001. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media follow up and share tendency are the same according to Linkedin usage.

H1 Hypothesis: Academicians' social media follow up and share tendency are not the same according to Linkedin usage.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.037 and sig value is 0.155. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Linkedin users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Linkedin users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis not the same according to Linkedin users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 12.971 and sig value is 0.00. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 4; answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.00. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency are the same according to Linkedin usage.

H1 Hypothesis: Academicians' universities technological capabilities tendency are not the same according to Linkedin usage.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.526 and sig value is 0.113. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Linkedin users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'news following tendency is the same according to Linkedin usage.

H1 Hypothesis: Academicians'news following tendency is not the same according to Linkedin usage.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 2.926 and sig value is 0.88. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Linkedin users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' technology advanced user tendency ratio is the same according to Linkedin users.

H1 Hypothesis: Academicians' technology advanced user tendency ratio is not the same according to Linkedin users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 12.942 and sig value is 0.000. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in question 3. answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

T-Test Twitter

For Table 78 Twitter T-Test please refer to Appendix C;

Do you use Twitter questions answers are: Yes answers 140, no answers 162.

For Table 79 Twitter Independent Samples Test 1 and Table 80 Twitter Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Twitter users.

H1 Hypothesis: Academicians' technology advanced user using education technology for education area ratio are not the same according to Twitter users.

Faktör 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 5.156 and sig value is 0.024. Variances are not the same due to the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.01. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' education technology and social media follow up and share tendency ratio are the same according to Twitter users.

H1 Hypothesis: Academicians' education technology and social media follow up and share tendency ratio are not the same according to Twitter users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.422 and sig value is 0.517. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media follow up and share tendency ratio are the same according to Twitter users.

H1 Hypothesis: Academicians' social media follow up and share tendency ratio are not the same according to Twitter users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.284 and sig value is 0.258. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Twitter users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis not the same according to Twitter users.

Faktör 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 7.305 and sig value is 0.007. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.001. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' news following tendency ratio is the same according to Twitter users.

H1 Hypothesis: Academicians' news following tendency ratio is not the same according to Twitter users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.007 and sig value is 0.158. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' technology advanced user tendency ratio are the same according to Twitter users.

H1 Hypothesis: Academicians' technology advanced user tendency ratio are not the same according to Twitter users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.248 and sig value is 0.619. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Academia

For Table 81 Academia T-Test please refer to Appendix C;

Do you use Academia.edu questions answers are: Yes answers 85, no answers 217.

For Table 82 Academia Independent Samples Test 1 and Table 83 Academia Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians'using education technology for education area tendency ratio are the same according to Academia edu. users.

H1 Hypothesis: Academicians'education technology for education area ratio are not the same according to Academia edu. users.

Faktör 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 13.195 and sig value is 0.000. Variances are not same due to

the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academician's education technology and social media sharing and following tendency ratio are the same according to Academia edu. users.
H1 Hypothesis: Academician's education technology and social media sharing and following area ratio are not the same according to Academia edu. users.

Faktör 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 4.876 and sig value is 0.028. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' education technology and social media sharing and following tendency ratio are the same according to Academia edu. users.
H1 Hypothesis: Academicians' education technology and social media sharing and following area ratio are not the same according to Academia edu. users.

Faktör 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 10.846 and sig value is 0.001. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.002. Hypothesis H0 is rejected.

H0 Hypothesis: Academician's communicate with other academicians tendency ratio is the same according to Academia edu. users.

H1 Hypothesis: Academician's communicate with other academicians ratio is not the same according to Academia edu. users.

Faktör 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 4.400 and sig value is 0.037. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'universities technological capability tendency ratio is the same according to Twitter users.

H1 Hypothesis: Academicians'universities technological capability tendency ratio is not the same according to Twitter users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.575 and sig value is 0.210. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio is the same according to Twitter users.

H1 Hypothesis: Academicians' news following tendency ratio is not the same according to Twitter users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.185 and sig value is 0.277. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' technology advanced user tendency ratio is the same according to Twitter users.

H1 Hypothesis: Academicians' technology advanced user tendency ratio is not the same according to Twitter users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 1.789 and sig value is 0.182. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Twitter users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Instagram

For Table 84 Instagram T-Test please refer to Appendix C;

Do you use Instagram questions are: yes answers 76, no answers 225.

For Table 85 Instagram Independent Samples Test 1 and Table 86 Instagram Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians'education technology for education area tendency ratio is the same according to Instagram users.

H1 Hypothesis: Academicians'education technology for education area tendency ratio is not the same according to Instagram users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.085 and sig value is 0.080. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1; answers which are given by Instagram users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media sharing and following tendency ratio are the same according to Instagram users.

H1 Hypothesis: Academicians' education technology and social media sharing and following tendency ratio are not the same according to Instagram users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.578 and sig value is 0.448. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Instagram users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'social media sharing and following tendency ratio are the same according to Instagram users.

H1 Hypothesis: Academicians'social media sharing and following ratio are not the same according to Instagram users.

Faktör 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 4.122 and sig value is 0.043. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians are the same according to Instagram users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians are not the same according to Instagram users.

Faktör 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 11.454 and sig value is 0.001. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.001. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Instagram users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Instagram users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.010 and sig value is 0.922. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Instagram users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio is the same according to Instagram users.

H1 Hypothesis: Academicians' news following tendency ratio is not the same according to Instagram users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.239 and sig value is 0.625. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Instagram users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology users tendency ratio are the same according to Instagram users.

H1 Hypothesis: Academicians' advanced technology users tendency ratio are not the same according to Instagram users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.442 and sig value is 0.507. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Instagram users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Itunes

For Table 87 Itunes T-Test please refer to Appendix C;

Do you use Itunes question answers are: Yes answers 45, no answers 256.

For Table 88 Itunes Independent Samples Test 1 and Table 89 Itunes Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' education technology using education area tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' education technology using education area tendency ratio are not the same according to Itunes users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.157 and sig value is 0.692. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media sharing and following tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' education technology and social media sharing and following tendency ratio are not the same according to Itunes users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.829 and sig value is 0.363. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media sharing and following tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' social media sharing and following tendency ratio are not the same according to Itunes users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.903 and sig value is 0.169. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3; answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is the same according to Itunes users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to Itunes users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.028 and sig value is 0.867. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given

by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Itunes users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.762 and sig value is 0.383. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Itunes users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.394 and sig value is 0.531. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved

H0 Hypothesis: Academicians' advanced technology users tendency ratio are the same according to Itunes users.

H1 Hypothesis: Academicians' advanced technology users tendency ratio are not the same according to Itunes users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.194 and sig value is 0.660. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Itunes users and non-users doesn't change among academicians. So hypothesis H0 is proved

T-Test GooglePlay

For Table 90 Google Play T-Test please refer to Appendix C;

Do you use Google play question answers are: Yes answers are 33, no answers are 268.

For Table 91 Google Play Independent Samples Test 1 and Table 92 Google Play Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Googleplay users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.314 and sig value is 0.576. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Googleplay users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results that F Statistics is 0.451 and sig value is 0.502. Variances are the same due to the sig's value which is higher than 0.05. As a result of this in factor 2; answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Googleplay users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.553 and sig value is 0.214. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is the same according to Googleplay users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to Googleplay users.

Faktör 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 9.473 and sig value is 0.002. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.005. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'universities technological capabilities tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Googleplay users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.001 and sig value is 0.980. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Googleplay users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.013 and sig value is 0.909. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Googleplay users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Googleplay users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.397 and sig value is 0.529. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3; answers which are given by Googleplay users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Youtube

For Table 93 Youtube T-Test please refer to Appendix C;

Do you use Youtube question answers are: Yes answers 149, no answers 153.

For Table 94 Youtube Independent Samples Test 1 and Table 95 Youtube Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Youtube users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.877 and sig value is 0.350. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Youtube proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Youtube users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.366 and sig value is 0.546. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Youtube users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.148 and sig value is 0.701. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Youtube users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis not the same according to Youtube users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.146 and sig value is 0.043. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.156. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Youtube users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.028 and sig value is 0.867. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are same according to Youtube users.

H1 Hypothesis: Academicians' news following tendency ratio are not same according to Youtube users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.656 and sig value is 0.419. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Youtube users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.470 and sig value is 0.226. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Blogs

For Table 96 Blogs T-Test please refer to Appendix C;

Do you use blog questions answers are: Yes questions are 119, no questions are 183.

For Table 97 Blogs Independent Samples Test 1 and Table 98 Blogs Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Blog users.

H1 Hypothesis: Academicians' education technology for education area tendency ratio are not the same according to Blog users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.785 and sig value is 0.029. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'using education technology and social media tendency ratio are the same according to Blog users.

H1 Hypothesis: Academicians'education technology and social media tendency ratio are not the same according to Blog users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 16.582 and sig value is 0.000. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' ratio of tendency tocommunicate with other acedemiciansis the same according to Blog users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other acedemiciansis not the same according to Blog users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 6.174 and sig value is 0.014. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Blog users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Blog users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.111 and sig value is 0.739. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Blog users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Blog users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Blog users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.161 and sig value is 0.689. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Blog users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Blog users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Blog users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.560 and sig value is 0.455. Variances are same due to the

sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Blog users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Wikis

For Table 99 Wikis T-Test please refer to Appendix C;

Do you use Wiki question answers are: Yes answers 65, No answers 237.

For Table 100 Wikis Independent Samples Test 1 and Table 101 Wikis Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Wiki users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.040 and sig value is 0.309. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Wiki users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.001 and sig value is 0.976. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Wiki users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statisticsis 2.400 and sig value is 0.122. Variances are same due to the sig's

value which is higher than 0.05. As a result of this in factor 3, answers which are given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' communicate with other acedemician tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' communicate with other academician tendency ratio are not the same according to Wiki users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 8.983 and sig value is 0.003. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0,002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capability tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' universities technological capability tendency ratio are not the same according to Wiki users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.211 and sig value is 0.647. Variances are same due to the sig's

value which is higher than 0.05. As a result of this in factor 5, answers which are given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Wiki users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.205 and sig value is 0.041. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 6, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' advanced technology users tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' advanced technology users tendency ratio are not the same according to Wiki users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.349 and sig value is 0.555. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are

given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Others

For Table 102 Others T-Test please refer to Appendix C;

Do you use "other" questions answers are: Yes answers 6, no answers 296.

For Table 103 Others Independent Samples Test 1; Table 104 Others Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to "other" users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to "other" users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.487 and sig value is 0.486. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to "other" users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to "other" users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.229 and sig value is 0.268. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2; answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to other users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.677 and sig value is 0.103. Variances are same due to the sig's

value which is higher than 0.05. As a result of this in factor 3, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to other users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to other users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.001 and sig value is 0.969. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to other users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.008 and sig value is 0.928. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Wiki users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Wiki users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.010 and sig value is 0.921. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology users tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' advanced technology users tendency ratio are not the same according to other users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.065 and sig value is 0.800. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Wiki users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Learning Management System

For Table 105 Learning Management System T-Test please refer to Appendix C;

‘Do your universities have a Learning management system?’ question, and the answers are: Yes answers 76, no answers are 226.

For Table 106 Learning Management System Independent Samples Test 1 and Table 107 Learning Management System Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians’ using education technology for education area tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians’ using education technology for education area tendency ratio are not the same according to Learning Management System users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.051 and sig value is 0.822. Variances are same due to the sig’s value which is higher than 0.05. As a result of this in factor 1, answers which are given by Learning Management System users and non-users doesn’t change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians’ using education technology and social media tendency ratio are the same according to Learning Management System users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Learning Management System users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.978 and sig value is 0.026. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Learning Management System users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.083 and sig value is 0.773. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to Learning Management System users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.014 and sig value is 0.905. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Learning Management System users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.045 and sig value is 0.832. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Learning Management System users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.042 and sig value is 0.838. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Learning Management System users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.011 and sig value is 0.917. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Learning Management System users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Publishing Data Base

For Table 108 Publishing Data Base T-Test please refer to Appendix C;

‘Does your university have Publishers Database?’ question, and the answers are: Yes answers 67, No answers 235.

For Table 109 Publishing Data Base Independent Samples Test 1 and Table 110 Publishing Data Base Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians’ using education technology for education area tendency ratio are the same according to Publishing Databases users.

H1 Hypothesis: Academicians’ using education technology for education area tendency ratio are not the same according to Publishing Databases users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.345 and sig value is 0.557. Variances are same due to the sig’s value which is higher than 0.05. As a result of this in factor 1; answers which are given by Publishers databases users and non-users doesn’t change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians’ using education technology and social media tendency ratio are the same according to Learning Management Sysyem users.

H1 Hypothesis: Academicians’ using education technology and social media tendency ratio are not same according to Learning Management System users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.391 and sig value is 0.37. Variances are not same due to the sig’s

value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'social media following and sharing tendency ratio are the same according to Publishing Databases users.

H1 Hypothesis: Academicians'social media following and sharing tendency ratio are not the same according to Publishing Databases users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.545 and sig value is 0.461. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Publishing Databases users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to Publishing Databases users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.195 and sig value is 0.659. Variances are same due to the sig's

value which is higher than 0.05. As a result of this in factor 4, answers which are given by Publisher database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Publishing Databases users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Publishing Databases users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.003 and sig value is 0.953. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by Publisher database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Publishing Databases users.

H1 Hypothesis: Academician's news following tendency ratio are not the same according to Publishing Databases users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.552 and sig value is 0.458. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by

news following users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'advanced technology user tendency ratio are the same according to Publishing Databases users.

H1 Hypothesis: Academicians'advanced technology user tendency ratio are not the same according to Publishing Databases users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.412 and sig value is 0.521. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Question 3; answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Open Source Data Base

For Table 111 Open Source Data Base T-Test please refer to Appendix C;

'Does your university have open source database? Question, and the answers are: Yes answers 63, no answers 239.

For Table 112 Open Source Data Base Independent Samples Test 1 and Table 113 Open Source Data Base Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Open source Databases users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Open source Databases users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.225 and sig value is 0.269. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 1, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Open source database users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Open source database users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.776 and sig value is 0.30. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0,012. Hypothesis H0 is rejected.

Hypothesis: Academicians'social media following and sharing tendency ratio are the same according to open source database users.

H1 Hypothesis: Academicians'social media following and sharing tendency ratio are not the same according to open source database users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.299 and sig value is 0.70. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' communicate with other academician tendency ratio are the same according to Open source Databases users.

H1 Hypothesis: Academicians' communicate with other academician tendency ratio are not the same according to Open source Databases users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.003 and sig value is 0.957. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 4, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Open source Databases users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio arenot the same according to Open source Databases users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.186 and sig value is 0.277. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 5, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Open source Databases users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Open source Databases users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.908 and sig value is 0.89. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Open source Databases users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Open source Databases users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.357 and sig value is 0.550. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Publishers database users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Digital Board

For Table 114 Digital Board T-Test please refer to Appendix C;

'Does your university have digital board?' question, and the answers are: Yes answers 42, no answers 259.

For Table 115 Digital Board Independent Samples Test 1 and Table 116 Digital Board Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians'using education technology for education area tendency ratio are the same according to Digital Board users.

H1 Hypothesis: Academicians'using education technology for education area tendency ratio are not the same according to Digital Board users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.511 and sig value is 0.114. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to digital board users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to digital board users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 6.310 and sig value is 0.13. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0,002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Digital Board users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Digital Board users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.960 and sig value is 0.047. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Digital board users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to Digital board users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 6.791 and sig value is 0.10. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'universities technological capabilities tendency ratio are the same according to Digital board users.

H1 Hypothesis: Academicians'universities technological capabilities tendency ratio are not the same according to Digital board users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.546 and sig value is 0.112. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Digital board users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Digital board users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.000 and sig value is 0.996. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Digital board users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Digital board users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.079 and sig value is 0.779. Variances are same due to the

sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by digital board users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Computer

For Table 117 Computer T-Test please refer to Appendix C;

'Does your university give a computer to you?' question, and the answers are: Yes answers 265, no answers 37.

For Table 118 Computer Independent Samples Test 1 and Table 119 Computer Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to computer users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.682 and sig value is 0.409. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 1, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to computer users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.243 and sig value is 0.622. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 2, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to computer users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.456 and sig value is 0.500. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 3; answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to computer users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.456 and sig value is 0.500. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 3, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' communicate with other academician tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' communicate with other academician tendency ratio are not the same according to computer users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.743 and sig value is 0.389. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 4; answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'universities technological capabilities tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians'universities technological capabilities tendency ratio are not the same according to computer users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.146 and sig value is 0.285. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 5, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to computer users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.020 and sig value is 0.888. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to computer users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 5.483 and sig value is 0.020. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by computer users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Internet

For Table 120 Internet T-Test please refer to Appendix C;

'Does your university give Internet for you?' question, and the answers are: Yes answers 230, no answers are 72.

For Table 121 Internet Independent Samples Test 1 and Table 122 Internet Independent Samples Test 2 please refer to Appendix C;

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Internet users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Internet users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.159 and sig value is 0.077. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 1, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology social media tendency ratio are the same according to Internet users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Internet users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.579 and sig value is 0.059. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 2, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Internet users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Internet users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.064 and sig value is 0.800. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 3, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'communicate with other academician tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians'communicate with other academician tendency ratio are not the same according to computer users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.550. and sig value is 0.459. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 4, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to computer users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to computer users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.279 and sig value is 0.598. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 5, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Internet users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Internet users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.822 and sig value is 0.365. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by Internet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to digital board users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to digital board users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 10.942 and sig value is 0.01. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in question 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

T-Test Youtube

For Table 123 Youtube T-Test please refer to Appendix C;

'Does your university give a Youtube for you?' question, and the answers are: Yes answers 145, no answers 157.

For Table 124 Youtube Independent Samples Test 1 and Table 125 Youtube Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Youtube users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 13.436 and sig value is 0.000. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians'using education technology and social media tendency ratio are not the same according to Youtube users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 12.277 and sig value is 0.001. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.002. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' social media following and sharing tendency are not the same according to Youtube users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 11.332 and sig value is 0.001. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 3 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academiciansis the same according to Youtube users.

H1 Hypothesis: Academician's ratio of tendency to communicate with other academiciansis not the same according to Youtube users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.132 and sig value is 0.145. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 4, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Youtube users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.723 and sig value is 0.369. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Youtube users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Youtube users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.356 and sig value is 0.551. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Internet users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Internet users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.661 and sig value is 0.104. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Youtube users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Wind Bandwidth

For Table 126 Wind Bandwidth T-Test please refer to Appendix C;

'Does your university have wind bindwidth?' questions, and the answers are: Yes answers 37, no answers 265.

For Table 127 Wind Bandwidth Independent Samples Test 1 and Table 128 Wind Bandwidth Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to wind bindwidth users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.169 and sig value is 0.042. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 1, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 1 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to wind bindwidth users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 5.769 and sig value is 0.017. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' communicate with other academician tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' communicate with other academician tendency ratio are not the same according to wind bindwidth users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.038 and sig value is 0.154. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 3, answers which are given by wind bindwidth users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' communicate with other academician tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' communicate with other academician tendency ratio are not the same according to wind bindwidth users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.357 and sig value is 0.038. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to wind bindwidth users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 8.280 and sig value is 0.004. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 5, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 5 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'news following tendency ratio are the same according to wind bindwidth users.

H1 Hypothesis: Academicians'news following tendency ratio are not the same according to wind bindwidth users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.959 and sig value is 0.163. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by wind bindwidth users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user are the same according to wind bindwidth users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to wind bindwidth users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.441 and sig value is 0.0119. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by wind bindwidth users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Technology Labarotories

For Table 129 Technology Labarotories T-Test please refer to Appendix C;

'Does your university have technology laboratory?' question, and the answers are: Yes answers 37, no answers 265.

For Table 130 Technology Labarotories Independent Samples Test 1 and Table 131 Technology Labarotories Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians'using education technology and education technology area tendency ratio are the same according to technology labaratory users.

H1 Hypothesis: Academicians'using education technology and education technology area tendency ratio are not the same according to technology labaratory users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.640 and sig value is 0.105. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 1; answers which are given by technology labaratory users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media tendency ratio are the same according to technology labarotory users.

H1 Hypothesis: Academicians' education technology and social media tendency ratio are not the same according to technology labaratory users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 8.984 and sig value is 0.003. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.015. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media following and sharing area tendency ratio are the same according to technology labaratory users.

H1 Hypothesis: Academicians' social media following and sharing area tendency ratio are not the same according to technology labaratory users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.038 and sig value is 0.154. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 3, answers which are given by technology labaratory users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' communicate with other academicians tendency ratio are the same according to technology labarotory users.

H1 Hypothesis: Academicians' communicate with other academicians tendency ratio are not the same according to technology labaratory users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 6.371 and sig value is 0.012. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.121. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to technology labarotory users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to technology labaratory users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 8.984 and sig value is 0.003. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 5, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 5 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to technology labaratory users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to technology labaratory users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.880 and sig value is 0.171. Variances are same due to the sig's value which is higher than 0.05. As a result of this in Factor 6, answers which are given by technology labaratory users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to technology labaratory users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to technology labaratory users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.037 and sig value is 0.082. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by technology labaratory users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Online Library

For Table 132 Online Library T-Test please refer to Appendix C;

'Does your university have online library?' question, and the answers are: Yes answers 99, no answers 203.

Table 133 Online Library Independent Samples Test 1 and Table 134 Online Library Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to online library users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.278 and sig value is 0.599. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to online library users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.684 and sig value is 0.409. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to online library users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.007 and sig value is 0.933. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is the same according to online library users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to online library users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.066 and sig value is 0.797. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4; answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to online library users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.122 and sig value is 0.727. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to online library users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.768 and sig value is 0.381. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to online library users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.181 and sig value is 0.671. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by online library users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Laptop

For Table 135 Laptop T-Test please refer to Appendix C;

'Does your university have Laptops?' question, and the answers are: Yes answers 153, no answers 149.

For Table 136 Laptop Independent Samples Test 1 and Table 137 Laptop Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians'using education technology for education area tendency ratio are the same according to Laptop users.

H1 Hypothesis: Academicians'using education technology for education area tendency ratio are not the same according to Laptop users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.129 and sig value is 0.720. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Laptop users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' education technology and social media tendency ratio are the same according to Laptop users.

H1 Hypothesis: Academicians' education technology and social media tendency ratio are not the same according to Laptop users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.789 and sig value is 0.182. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2, answers which are given by Laptop users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Laptop users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Laptop users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.233 and sig value is 0.630. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Laptop users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is the same according to laptop users.

H1 Hypothesis: Academician's ratio of tendency to communicate with other academicians is not the same according to laptop users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 5.972 and sig value is 0.015. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0.270. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to online library users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 8.199 and sig value is 0.004. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 5, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 5 is examined and it is seen that P values for Sig2 is 0.003. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to online library users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to online library users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 9.048 and sig value is 0.003. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in Factor 6, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 6 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians'advanced technology user tendency ratio are the same according to technology labarotory users.

H1 Hypothesis: Academicians'advanced technology user tendency ratio are not the same according to technology labaratory users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.258 and sig value is 0.040. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in question 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of question 3 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

T-Test Tablet

For Table 138 Tablet T-Test please refer to Appendix C.

'Does your university have tablets?' question, and the answers are: Yes answers 83, no answers 218.

For Table 139 Tablet Independent Samples Test 1 and Table 140 Tablet Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to Tablet users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.280 and sig value is 0.132. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to Tablet users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 15.022 and sig value is 0.000. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 2, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 2 is examined and it is seen that P values for Sig2 is 0.000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Tablet users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.271 and sig value is 0.133. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians'communicate with other academicians tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians'communicate with other academicians tendency ratio arenot the same according to Tablet users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.664 and sig value is 0.032. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 4, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 4 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to Tablet users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.591 and sig value is 0.033. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in factor 5, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of factor 5 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to Tablet users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.506 and sig value is 0.477. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to Tablet users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.628 and sig value is 0.429. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Progection

For Table 141 Progection T-Test please refer to Appendix C;

'Does your university have projections?' question, and the answers are: Yes answers 194, no answers 108.

For Table 142 Progection Independent Samples Test 1 and Table 143 Progection Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to projection users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to projection users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.620 and sig value is 0.204. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1; answers which are given by projection users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology and social media tendency ratio are the same according to projection users.

H1 Hypothesis: Academicians' using education technology and social media tendency ratio are not the same according to projection users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.036 and sig value is 0.851. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 2; answers which are given by projection users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to Tablet users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to Tablet users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.026 and sig value is 0.871. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 1; answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to projection users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to projection users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.760 and sig value is 0.053. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4, answers which are given by progection users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to progection users.

H1 Hypothesis: Academicians' universities technological capabilities tendency ratio are not the same according to progection users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.122 and sig value is 0.078. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5; answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to projection users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to projection users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.258 and sig value is 0.134. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' using education technology for education area tendency ratio are the same according to progection users.

H1 Hypothesis: Academicians' using education technology for education area tendency ratio are not the same according to progection users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.199 and sig value is 0.139. Variances are same due to the sig's value which is higher than 0.05. As a result of this in question 3, answers which are given by Tablet users and non-users doesn't change among academicians. So hypothesis H0 is proved.

T-Test Other

For Table 144 Other T-Test please refer to Appendix C;

‘Does your university have projections?’ question, and the answers are: yes answers 4, no answers 297.

For Table 145 Other Independent Samples Test 1 and Table 146 Other Independent Samples Test 2 please refer to Appendix C.

H0 Hypothesis: Academicians’ using education technology for education area tendency ratio are the same according to other users.

H1 Hypothesis: Academicians’ using education technology for education area tendency ratio are not the same according to other users.

Factor 1: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 2.209 and sig value is 0.138. Variances are same due to the sig’s value which is higher than 0.05. As a result of this in factor 1, answers which are given by other users and non-users doesn’t change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians’ using education technology and social media tendency ratio are the same according to other users.

H1 Hypothesis: Academicians’ using education technology and social media tendency ratio are not the same according to other users.

Factor 2: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.850 and sig value is 0.357. Variances are same due to the sig’s

value which is higher than 0.05. As a result of this in factor 2; answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' social media following and sharing tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' social media following and sharing tendency ratio are not the same according to other users.

Factor 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.122 and sig value is 0.078. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 3; answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is the same according to other users.

H1 Hypothesis: Academicians' ratio of tendency to communicate with other academicians is not the same according to other users.

Factor 4: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 1.592 and sig value is 0.208. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 4; answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' universities technological capabilities tendency ratio are the same according to other users.

H1 Hypothesis: Academicians'universities technological capabilities tendency ratio are not the same according to other users.

Factor 5: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 3.105 and sig value is 0.079. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 5; answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' news following tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' news following tendency ratio are not the same according to other users.

Factor 6: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 0.011 and sig value is 0.917. Variances are same due to the sig's value which is higher than 0.05. As a result of this in factor 6, answers which are given by other users and non-users doesn't change among academicians. So hypothesis H0 is proved.

H0 Hypothesis: Academicians' advanced technology user tendency ratio are the same according to other users.

H1 Hypothesis: Academicians' advanced technology user tendency ratio are not the same according to other users.

Question 3: According to Levene test which is in independent groups T –Test, it is seen from the SPSS results F Statistics is 4.004 and sig value is 0.047. Variances are not same due to the sig's value which is lower than 0.05. As a result of this in question 3, answers which are given by different age groups change among academicians. H1 hypothesis is accepted due to Levene Test. So, second line of question 3 is examined and it is seen that P values for Sig2 is 0,000. Hypothesis H0 is rejected.

5.3.2. Findings Analysis

Findings are analyzed by two step phase and results are evaluated in the scope of thesis hypothetical framework. Practices are made with 30 academicians by using indepth analysis. Surveys made with 300 academicians are studied carefully, statistically analyzed and shared. By the end Indepth and Statistical analysis results are compared and outcomes are shared.

Survey Questions:

Has education technologies changed the scholarly communication process?

Which materials and platforms are used in scholarly communication process?

What are theusage rates of education technology in scholarly communication process?

What institutions offer to academicians in scholarly communication process?

5.3.3. Indepth Analysis

Common answer is social media is actively used in their daily and regular academic life. While facebook is used by 20 of them; Linkedin, Twitter, Academia.edu is commonly used social networks. Only one academician use Onenote and Google Drive.

They also expressed the intensive usage of technology in future and like hologram education.

When compared the State Universities vs. Foundation Universites; it is seen that technology usage in State Universities is comparatively low.

Number of academicians using internet in their academic sharing's and benefit from the University's technological infrastructure consists the 100% of participants.

The point of "when and where academicians use technology in scholarly communication" is examined by indepth analysis. Also the way of scholarly communication process and it's trend in Turkey is searched.

It is seen that academicians communicate with other academicians in domestic abroad countries for scholarly communication.

30 of 30 academicians benefit from Linkedin, Academia.edu, Facebook, PC and Internet.

Most of the academicians expressed that they use digital publishing and use social media to communicate with their students rather than academic research. Social media is just followed to know about the conference announcements and promotes.

Academicians commonly attend to European projects with other academicians acquainted in scholarly communication process.

Regarding to the common responses gathered from academicians, it is seen that the education technologies has an important role in academicians daily life and it will have more in near future. Half of the academicians think that education technologies will also create new fields in the future.

17 of 30 academicians who works in foundation Universities are satisfied from their University's opportunities.

5 of the academicians are following academic blogs and web sites. Academicians especially from B University have reflected the high level technological framework established in their University. Also every student and teacher have been equipped with tablet. They use one note and drive for academic document management.

Academicians think that academic honesty is an important and inseparable part of scholarly communication and Turnity which indicates the plagiarism is cared so much.

Turnity is used in other universities within student's and academicians thesis and article compose process to prevent plagiarism.

Also it is seen that academicians from state university are not obligated to use education technologies, they are free to use education technologies while making the year plan.

These academicians think that government should invest more into education technologies to provide further academic research and scholarly communication.

5.3.4. StatisticalAnalysis

Analysis has done over 302 academicians to expose education technology usage trend in scholarly communication process and results are compared.

Demographic Results

Average age over participants is 41,5 and there are 302 between 25-67.

Participants are from 6 different university where 111 of them from foundation university and 191 from state university.

140 men vs. 162 women.

Most participation has come from Associate Professor title with the count of 95.

Given answers to the first question of survey

Learning Management System users in their university

Yes:133/No:169

Publishers database usage

Yes:117/No:185

Facebook usage as social media

Yes:240/No:62

Linkedin usage

Yes:171/No:131

Twitter usage

Yes:140/No:162

Academia.edu usage

Yes:85/No:217

Instagram usage

Yes:76/No:225

I-tunes usage

Yes:45/No:256

Google play usage

Yes:33/No:268

Youtube usage

Yes:149/No:159

Blog usage

Yes:119/No:183

Wikileri usage

Yes:65/No:237

Given answers to the second question of survey which is Education technologies offered in University

Learning Management Systems offered

Yes:76/No:226

Publishers database offered

Yes:67/No:235

Access to open source databases

Yes:63/No:239

Digital Board usage

Yes:49/No:259

Computer usage

Yes:265/No:37

Internet usage

Yes:230/No:77

Youtube usage

Yes:145/No:157

Wide BandWidth

Yes:37/No:237

Technology usage

Yes:39/No:263

Online Library

Yes:99/No:203

Laptop usage

Yes:153/No:149

Tablet usage

Yes:83/No:218

Projectionusage

Yes:194/No:108

Academicians education technology usage and universities education technology supply is analyzed by above given answers to first and second questions.

In the second step questions within 4, are grouped under 7 main factors.

Factor Analysis results are below according to the answers given by participants.

25 questions located within question 4 are re-defined and entered to SPSS. They are grouped and 7 factors raised. By the way questions within same group will be called with same factor. Some questions are not used because their trustworthiness couldn't be tested.

Factor analysis final notes

Factor 1: S4 - 4-3-5-6-1-9

Factor 2: S4 - 19-18-17-21

Factor 3: S4 - 24-23-25-22

Factor 4: S4 - 11-12

Factor 5: S4 - 8-7-10-2

As seen in the Factor Analysis results table, the 4th question of the survey consists of 25 questions in itself which have 5 evaluations. As a result of the confidence test of these questions and the factor analysis confidence test conducted, the questions were collected under the main heading of 7 factors excluding the 20th question, and the confidence tests and Bartlett sphericity tests were observed to be high. After this point, the questions were collected under these factors and analyses were conducted.

The KMO validity is 0.868. Because it is above 0.80, this figure reveals a perfect validity.

The confidence tests were conducted for every question. Since the confidence results of the questions 13 and 14 in S4 could not be proved, these questions were not used.

T-Test Answers

Questions and answers which are grouped into two, are analyzed with T Test. These questions are about the University type, Sexuality, Age of participants and the answers given to the S1 and S2 and their breakdown to factors in S4 and comparison/analyse with 25 question under 7 grouped factor. According to Beril Durmuş, this test takes part within "Difference Tests". To apply difference test, there should be a classified variable consisting independent discrete sub groups. If the classified variable is consisting of more than two sub groups then ANOVA analysis should be done.(Durmuş, 2013, 117).

T-Test findings

University type T-Test cause are;

Average for education technology usage in Foundation and State Universities for educational purposes by academicians are same.

Average for willingness for education technologies and technology usage in Foundation and State Universities by academicians are same.

Average for social media follow-up and share in Foundation and State Universities by academicians are same.

Average of established connections between different academicians in Foundation and State Universities are same.

Average of opinions remarked about universities technological opportunities by academicians in Foundation and State Universities are same.

Average of tendency about news followings by academicians in Foundation and State Universities are not same..

Average of tendency by academicians about seeing their selfs high tech user in Foundation and State Universities are not same.

Gender T-Test cause are;

Academician's education technology usage ratio for education purposes doesn't change iro sexualty.

Academician's education technology and social media usage are same iro sexualty.

Academician's social media follow up and share tendency ratio are same iro sexualty.

Academician's communication tendency with other academicians are same iro sexualty.

Academician's opinions about university supported technological equipments are same iro sexualty.

Academician's news follow up tendency ratio are same iro sexualty.

Average of tendency by academicians about seeing their selfs high tech user iro sexuality groups are not same.

Age T-Test cause are;

Academician's education technology usage ratio for education purposes changes according to age.

Academician's education technology and social media usage tendency are same according to age.

Academician's social media follow up and share tendency ratio are not same according to age.

Academician's communication tendency with other academicians are same according to age.

Academician's opinions about university supported technological equipments are same according to age.

Academician's news follow up tendency ratio are not same according to age.

Average of tendency by academicians about seeing their selfs high tech user iro age groups are not same.

Question 1

Learning Management System Usage T-Test cause are;

Academician's education technology usage ratio varies according to Learning Management System usage.

Academician's education technology and social media usage tendency are same according to Learning Management System usage.

Academician's social media follow up and share tendency ratio are not same according to Learning Management System users.

Academician’s communication tendency with other academicians are same according to Learning Management System users.

Academician’s opinions about university supported technological equipments according to Learning Management System users are same.

Academician’s news follow up tendency ratio according to Learning Management System users are same.

Tendency of academicians about seeing their selfs high tech user according to Learning Management System users and non-users are same.

Oxford - Pearson Publishing Usage T-Test

Academician’s education technology usage ratio varies according to use of Oxford Pearson Publishing usage.

Academician’s education technology and social media usage tendency are same according to Oxford Pearson Publishing usage.

Academician’s social media follow up and share tendency ratio are same according toOxford Pearson Publishing user’s.

Academician’s communication tendency with other academicians are same according to Oxford Pearson Publishing user’s.

Academician’s opinions about university supported technological equipments according to Oxford Pearson Publishing user’s are same.

Academician’s news follow up tendency ratio according to Oxford Pearson Publishing user’s are same.

Tendency of academicians about seeing their selfs high tech user according to Oxford Pearson Publishing user’s are same.

Facebook Usage T-Test

Academician's using education technology tendency ratio are not same according to using Facebook users.

Academician's using education technology and social media follow up and share tendency ratio are not same according to Facebook users.

Academician's social media usage tendency are same according to Facebook usage.

Academician's communicate with other academician tendency ratio are not same according to Facebook users.

Academician's universities technologic capabilities tendency are same according to Facebook usage.

Academician's news following tendency are same according to Facebook usage.

Academician's technology advanced user tendency are same according to Facebook usage.

Linkedin Usage T-Test

Academician's using education technology to education area tendency ratio are not same according to Linkedin users.

Academician's education technology and social media follow up and share tendency ratio are not same according to Linkedin users.

Academician's social media follow up and share tendency are same according to Linkedin usage.

Academician's communicate with other academician tendency ratio are not same according to Linkedin users.

Academician's universities technological capabilities tendency are same according to Linkedin usage.

Academician's news following tendency are same according to Linkedin usage.

Academician's technology advanced user tendency ratio are not same according to Linkedin users.

Twitter Usage T-Test

Academician's technology advanced user using education technology for education area ratio are not same according to Twitter users.

Academician's education technology and social media follow up and share tendency ratio are same according to Twitter users.

Academician's social media follow up and share tendency ratio are same according to Twitter users.

Academician's communicate with other academician ratio are not same according to Twitter users.

Academician's news following tendency ratio are same according to Twitter users.

Academician's technology advanced user tendency ratio are same according to Twitter users.

Academia.edu Usage T-Test

Academician's education technology for education area ratio are not same according to Academia edu. users.

Academician's education technology and social media sharing and following area ratio are not same according to Academia edu. users.

Academician's education technology and social media sharing and following area ratio are not same according to Academia edu. users.

Academician's communicate with other academicians ratio are not same according to Academia edu. users.

Academician's universities technological capability tendency ratio are same according to Twitter users.

Academician's news following tendency ratio are same according to Twitter users.

Academician's technology advanced user tendency ratio are same according to Twitter users.

Instagram Usage T-Test

Academician's education technology for education area tendency ratio are same according to Instagram users.

Academician's education technology and social media sharing and following tendency ratio are same according to Instagram users.

Academician's social media sharing and following ratio are not same according to Instagram users.

Academician's communicate with other academician ratio are not same according to Instagram users.

Academician's universities technological capabilities tendency ratio are same according to Instagram users.

Academician's news following tendency ratio are same according to Instagram users.

Academician's advanced technology users tendency ratio are same according to Instagram users.

Itunes Usage T-Test

Academician's education technology using education area tendency ratio are same according to Itunes users.

Academician's education technology and social media sharing and following tendency ratio are same according to Itunes users.

Academician's social media sharing and following tendency ratio are same according to Itunes users.

Academician's communicate with other academicians tendency ratio are same according to Itunes users.

Academician's universities technological capabilities tendency ratio are same according to Itunes users.

Academician's news following tendency ratio are same according to Itunes users.

Academician's advanced technology users tendency ratio are same according to Itunes users.

Google-play Usage T-Test

Academician's using education technology for education area tendency ratio are same according to Googleplay users.

Academician's using education technology and social media tendency ratio are same according to Googleplay users.

Academician's social media following and sharing tendency ratio are same according to Googleplay users.

Academician's communicate with other academician ratio are not same according to Googleplay users.

Academician's universities technological capabilities tendency ratio are same according to Googleplay users.

Academician's news following tendency ratio are same according to Googleplay users.

Academician’s advanced technology user tendency ratio are same according to Googleplay users.

Youtube Usage T-Test

Academician’s using education technology for education area tendency ratio are same according to Youtube users.

Academician’s using education technology and social media tendency ratio are same according to Youtube users.

Academician’s social media following and sharing tendency ratio are same according to Youtube users.

Academician’s communicate with other academician tendency ratio are not same according to Youtube users.

Academician’s universities technological capabilities tendency ratio are same according to Youtube users.

Academician’s news following tendency ratio are same according to Youtube users.

Academician’s social media following and sharing tendency ratio are same according to Youtube users.

Blog Usage T-Test

Academician’s education technology for education area tendency ratio are not same according to Blog users.

Academician’s education technology and social media tendency ratio are not same according to Blog users.

Academician’s social media following and sharing tendency ratio are same according to Blog users.

Academician's communicate with other academician tendency ratio are not same according to Blog users.

Academician's news following tendency ratio are same according to Blog users.

Academician's universities technological capabilities tendency ratio are same according to Blog users.

Academician's advanced technology user tendency ratio are same according to Blog users.

Wiki Usage T-Test

Academician's using education technology for education area tendency ratio are same according to Wiki users.

Academician's using education technology and social media tendency ratio are same according to Wiki users.

Academician's social media following and sharing tendency ratio are same according to Wiki users.

Academician's communicate with other academician tendency ratio are not same according to Wiki users.

Academician's universities technological capability tendency ratio are same according to Wiki users.

Academician's news following tendency ratio are not same according to Wiki users.

Academician's advanced technology users tendency ratio are same according to Wiki users.

Other Usage T-Test

Academician's using education technology for education area tendency ratio are same according to "other" users.

Academician's using education technology and social media tendency ratio are same according to "other" users.

Academician's social media following and sharing tendency ratio are same according to other users.

Academician's communicate with other academician tendency ratio are same according to other users.

Academician's universities technological capabilities tendency ratio are same according to other users.

Academician's news following tendency ratio are same according to other users.

Academician's advanced technology users tendency ratio are same according to other users.

Question 2

Universities Capabilities: Learning Management System T-Test

Academician's using education technology for education area tendency ratio are same according to Learning Management Sysyem users.

Academician's using education technology and social media tendency ratio are not same according to Learning Management System users.

Academician's social media following and sharing tendency ratio are same according to Learning Management Sysyem users.

Academician's communicate with other academician tendency ratio are same according to Learning Management Sysyem users.

Academician's universities technological capabilities tendency ratio are same according to Learning Management Sysyem users.

Academician's news following tendency ratio are same according to Learning Management Sysyem users.

Academician's advanced technology user tendency ratio are same according to Learning Management Sysyem users.

Universities Capabilities: Publishers Database T-Test

Academician's using education technology for education area tendency ratio are same according to Publishing Databases users.

Academician's using education technology and social media tendency ratio are not same according to Learning Management System users.

Academician's social media following and sharing tendency ratio are same according to Publishing Databases users.

Academician's communicate with other academician tendency ratio are same according to Publishing Databases users.

Academician's universities technological capabilities tendency ratio are same according to Publishing Databases users.

Academician's news following tendency ratio are same according to Publishing Databases users.

Academician's advanced technology user tendency ratio are same according to Publishing Databases users.

Universities Capabilities: Open Source Database

Academician's using education technology for education area tendency ratio are same according to Open source Databases users.

Academician's using education technology and social media tendency ratio are not same according to Open source database users.

Academician's social media following and sharing tendency ratio are not same according to open source database users.

Academician's communicate with other academician tendency ratio are same according to Open source Databases users.

Academician's universities technological capabilities tendency ratio are same according to Open source Databases users.

Academician's news following tendency ratio are same according to Open source Databases users.

Academician's advanced technology user tendency ratio are same according to Open source Databases users.

Universities Capabilities: Digital Board T-Test

Academician's using education technology for education area tendency ratio are same according to Digital Board users.

Academician's using education technology and social media tendency ratio are not same according to digital board users.

Academician's social media following and sharing tendency ratio are same according to Digital Board users.

Academician's communicate with other academician tendency ratio are same according to Digital board users.

Academician's universities technological capabilities tendency ratio are same according to Digital board users.

Academician’s news following tendency ratio are same according to Digital board users.

Academician’s universities technological capabilities tendency ratio are same according to Digital board users.

Universities Capabilities: Computer T-Test

Academician’s using education technology for education area tendency ratio are same according to computer users.

Academician’s using education technology and social media tendency ratio are same according to computer users.

Academician’s social media following and sharing tendency ratio are same according to computer users.

Academician’s communicate with other academician tendency ratio are same according to computer users.

Academician’s universities technological capabilities tendency ratio are same according to computer users.

Academician’s news following tendency ratio are same according to computer users.

Academician’s advanced technology user tendency ratio are same according to computer users.

Universities Capabilities: Internet T-Test

Academician’s using education technology for education area tendency ratio are same according to Internet users.

Academician’s using education technology social media tendency ratio are same according to Internet users.

Academician's social media following and sharing tendency ratio are same according to Internet users.

Academician's communicate with other academician tendency ratio are same according to computer users.

Academician's universities technological capabilities tendency ratio are same according to computer users.

Academician's news following tendency ratio are same according to Internet users.

Academician's advanced technology user tendency ratio are not same according to digital board users.

Universities Capabilities: Youtube T-Test

Academician's using education technology for education area tendency ratio are not same according to Youtube users.

Academician's using education technology and social media tendency ratio are not same according to Youtube users.

Academician's social media following and sharing tendency are not same according to Youtube users.

Academician's communicate with other academician tendency ratio are same according to Youtube users.

Academician's news following tendency ratio are same according to Youtube users.

Academician's news following tendency ratio are same according to Youtube users.

Academician's advanced technology user tendency ratio are same according to Internet users.

Universities Capabilities: Wind Bindwidth T-Test

Academician’s using education technology for education area tendency ratio are not same according to wind bindwidth users.

Academician’s using education technology and social media tendency ratio are not same according to wind bindwidth users.

Academician’s communicate with other academician tendency ratio are same according to wind bindwidth users.

Academician’s communicate with other academician tendency ratio are not same according to wind bindwidth users.

Academician’s universities technological capabilities tendency ratio are not same according to wind bindwidth users.

Academician’s news following tendency ratio are same according to wind bindwidth users.

Academician’s advanced technology user are same according to wind bindwidth users**.**

Universities Capabilities: Technology Labaratories

Academician’s using education technology and education technology area tendency ratio are same according to technology labaratory users.

Academician’s education technology and social media tendency ratio are not same according to technology labaratory users.

Academician’s social media following and sharing area tendency ratio are same according to technology labaratory users.

Academician’s communicate with other academicians tendency ratio are not same according to technology labaratory users.

Academician’s universities technological capabilities tendency ratio are not same according to technology labaratory users.

Academician’s news following tendency ratio are same according to technology labaratory users.

Academician’s advanced technology user tendency ratio are same according to technology labaratory users.

University Capabilities: Online Library T-Test

Academician’s using education technology for education area tendency ratio are same according to online library users.

Academician’s using education technology and social media tendency ratio are same according to online library users.

Academician’s social media following and sharing tendency ratio are same according to online library users.

Academician’s communicate with other academicians tendency ratio are same according to online library users.

Academician’s universities technological capabilities tendency ratio are same according to online library users.

Academician’s news following tendency ratio are same according to online library users.

Academician’s advanced technology user tendency ratio are same according to online library users.

Universities Capabilities: Laptop T-Test

Academician’s using education technology for education area tendency ratio are same according to Laptop users.

Academician’s education technology and social media tendency ratio are same according to Laptop users.

Academician's social media following and sharing tendency ratio are same according to Laptop users.

Academician's communicate with other academicians tendency ratio are not same according to laptop users.

Academician's universities technological capabilities tendency ratio are not same according to online library users.

Academician's news following tendency ratio are not same according to online library users.

Academician's advanced technology user tendency ratio are not same according to technology labaratory users.

Universities Capabilities: Tablet T-Test

Academician's using education technology for education area tendency ratio are same according to Tablet users.

Academician's using education technology and social media tendency ratio are not same according to Tablet users.

Academician's social media following and sharing tendency ratio are same according to Tablet users.

Academician's communicate with other academicians tendency ratio are not same according to Tablet users.

Academician's universities technological capabilities tendency ratio are not same according to Tablet users.

Academician's news following tendency ratio are same according to Tablet users.

Academician's advanced technology user tendency ratio are same according to Tablet users.

Universities Capabilities: Progection T-Test

Academician’s using education technology for education area tendency ratio are same according to progection users.

Academician’s using education technology and social media tendency ratio are same according to progection users.

Academician’s social media following and sharing tendency ratio are same according to Tablet users.

Academician’s using education technology for education area tendency ratio are same according to progection users.

Academician’s universities technological capabilities tendency ratio are same according to progection users.

Academician’s news following tendency ratio are same according to progection users.

Academician’s using education technology for education area tendency ratio are same according to progection users.

Universities Capabilities: Other T-Test

Academician’s using education technology for education area tendency ratio are same according to other users.

Academician’s using education technology and social media tendency ratio are same according to other users.

Academician’s social media following and sharing tendency ratio are same according to other users.

Academician’s communicate with other academicians tendency ratio are same according to other users.

Academician's universities technological capabilities tendency ratio are same according to other users.

Academician's news following tendency ratio are same according to other users.

Academician's advanced technology user tendency ratio are not same according to other users.

6. CONCLUSION&RECOMMENDATIONS

This research aims to prove that education technology has been changing scholarly communication processes and this has become a social action, and this is the basis of the hypothesis. In this context, four main research questions were prepared. 30 academicians were personally interviewed with in-depth method of analysis. The questionnaire prepared was conducted by asking face-to-face questions to 300 academicians. The answers of the academicians were analyzed by statistical analysis.

The first research question and the results of the relevant research are exhibited and detailed below.

Has the usage of education technology changed scholarly communication processes?

21st century has brought along many changes in the fields of education and technology. The scholarly communication processes used to continue with paper, pen and books ten years ago, however the situation has changed at the present time. Student information systems constitute the first stage of the inception of the usage of technology as a material in education. The

records kept in computers facilitate the jobs of academicians and administrative staff. Academicians sharing visual presentations with their students have come to an easier state with overhead projectors, slides and applications like PowerPoint, etc. Apart from the opportunities of academicians giving lectures, entering information and grades, averaging grades and other data and making analyses easier, this state enables academicians to allocate more time for academic studies.The possibility of doing academic studies in a common collaboration is becoming easy and accessible with the utilization of education technologies.Scholarly communication processes reveal the fact that the emergence of social media has accelerated scholarly communication. The social media fields like Facebook, Linkedin and Academia.edu have become fields of communication that are frequently used by academicians. The usage rates of social media of academicians working at state universities and foundation universities are distributed equally. On the other hand, the usage of the education technologies that are not among the extensive services presented by universities is seen to be provided more by the foundation universities. Therefore, the scholarly communicating processes of academicians working at state universities using technology are less than the academicians working at the foundation universities. The Internet and social media have accelerated the processes of scholarly communicating and collaborating jointly. The processes of conducting joint works and projects of the academicians in different countries and regions have gained speed and promptness with the Internet and social media.

Which materials and media are particularly used in scholarly communication processes?

The researchers who answered 302 questionnaires and attended 30 personal interviews within the scope of the research stated that they particularly and frequently use social media.Academicians can particularly and actively communicate in scholarly communication

processes regarding the usage of social media. They can follow new publications, conferences and academic and scientific developments on social media. They can research the academic institutions and pages of associations and universities at which they can do joint studies. They can reach the academicians at other universities via email. They can attend conferences and seminars by applying online. This study revealed the fact that scholarly communication processes have undergone a change with education technologies and social media. Academicians prefer to communicate with technological tools instead of letters and face-to-face meetings. Especially websites like Facebook, Linkedin, Twitter and Academia.edu are used for the purposes of social networking and following people. The academicians participated the research from state universities indicated that the technological opportunities that their universities provide are less than the opportunities thatfoundation universities provide. On the other hand, the academicians who participated the research from foundation universities indicated that the technological opportunities that their universities provide are more than the opportunities state universities provide. It is possible to observe that especially technological equipment like technology laboratory, smart board, laptop and tablet are seen as the technological opportunities that foundation universities present. It is also possible to observe the fact that media like YouTube, databases of publishing houses and online share platforms are used less at universities.

Akademik iletişimde eğitim teknolojileri kullanım oranları nedir?

Average age is found as 43,2616.Average age of of 302 participant is found as 41,5000.

Age of participants vary between 25-67 and number of people attandence in related interval is not regular. Most participation is provided in age 33 which is by 23 person. Others are as below;

43 or older 2 person, 42 or younger 1 person and only one person in 25. In following tables participants will be analysed according to different contents of the study.

302 participants has joined to survey and details are entered to program without any data loss.

University distribution tables regarding to it's kind shows that; 111 of 302 participant has joined the survey from foundation and 191 of 302 from state university

Above table shows the resercher distribution according to their work place. Most participation has come off from P University with 115 and lowest by Y University by 24.

Distribution of sexualty is 140 of 302 is men and 162 of 302 is woman, percentage ratio is as 46,3 percent.vs. 53,6percent.

While looking to the title of participants, it is seen that most participation is come from Doç.Dr. which is equal to 95 person and by ratio of 31,5 percent..

While learning management system users is 133, 169 of 302 doesn't use. Ratio is as %44 ve %56.

User of Pearson-Oxford and similar publisher databases ise 117 and non-users 185. This is equal to 38,7 percent.vs. 61,3 percent..

User of Pearson-Oxford and similar publisher databases ise 117 and non-users 185. This is equal to 38,7 percent.vs. 61,3 percent..

Linkedin users is 171 where non-users 131. This is figuring as 56,6 percent.vs. 43,4 percent..

Twitter users as social media is 140 where non-users 162. This is figuring as 46,4 percent. vs. 53,6 percent..

Academia.edu site users is 85 where non-users 217. This is figuring as 28,1 percent.vs. 71,9 percent..

Instagram users is 76 where non-users 225. This is figuring as 25,2 percent.vs. 74,5 percent..

I-Tunes users is 45 where non-users 256. This is figuring as 14,9 percent.vs. 84,8 percent..

Google Play users is 33 where non-users 268. This is figuring as 10,9 percent. vs. 88,7percent..

You Tube users is 149 where non-users 153. This is figuring as 49,3 percent. vs. 50,7 percent..

Blog users is 119 where non-users 183. This is figuring as 39,4 percent.vs. 60,6 percent..

Wiki users is 65 where non-users 237. This is figuring as 21,5 percent. vs. 78,5 percent..

Other education technology users is 6 where non-users 296.

Education technologies were observed to be mostly used by associate professors and research associates. The ones with the title 'professor' were determined tobe the least frequent users of education technologies.

Considering all academicians, it is possible to indicate that the rate of using technology is high among them. The most frequent usage of education technology is observed with desktop computers and projectors. Facebook and Linkedin are the products with the highest usage rate.

What opportunities do the institutions that academicians work provide them in scholarly communication processes?

Content management provider universities is 76 where non-providers 226. This is figuring as 25,2 percent.vs. 74,8 percent..

Access provider Universities for publisher databases is 67 where non-providers 235. This is figuring as 22,2 percent. vs. 7,8 percent..

Access provider Universities for open sources is 63 where non-providers 239. This is figuring as 20,9 percent. vs. 79,1 percent..

Smart Board provider Universities is 42 where non-providers 259. This is figuring as 13,9 percent.vs. 85,8 percent..

Personal computer provider Universities is 265 where non-providers 37. This is figuring as 87,7 percent. vs. 12,3 percent..

You Tube access provider Universities is 145 where non-providers 157. This is figuring as %48 vs. %52.

Wide band internet provider Universities is 37 where non-providers 265. This is figuring as 12,3percent. vs. 87,7 percent..

Technology laboratory provider Universities is 38 where non-providers 263. This is figuring as 12,9 percent. vs. 87,1 percent..

Online Library provider Universities is 99 where non-providers 203. This is figuring as %32,8 vs. 67,2 percent.

Laptop provider Universities is 153 where non-providers 149. This is figuring as 50,7 percent. vs. 49,3 percent..

Tablet provider Universities is 83 where non-providers 218. This is figuring as 7,5 percent. vs. 72,2 percent..

Projection device provider Universities is 194 where non-providers 108. This is figuring as 64,2 percent. vs. 35,8 percent..

Other technological instruments provider Universities is 4 where non-providers 297. This is figuring as 1,3 percent. vs. 98,3 percent..

The academicians who indicated that they benefit from the technological opportunities that their universities provide them in scholarly communication processes also stated that they

were dissatisfied with especially the broad bandwidth. The rates of universities supplying laptops and computers are observed to be high. The rate of providing online library and learning management systems was observed to be 1/3. All the universities do not provide this service. The rates of academicians accessing social media websites like Facebook, Linkedin and Academia.edu reveal the fact that universities generally provide this service. The rates of universities providing smart boards, which are products of high-level education technology,are low.

Recommendations

Scholarly communication processes is a newly-developing field in Turkey that develops with technologies and inventions added every second. Across the globe, scholarly communication is seen to be differentiated and changed every year in connection with technology.A specific view considering especiallythe universities and the academicians participated this study exhibits the fact that the rates of academicians using technology in education and using technology and social media in the processes of scholarly communication and academic collaboration are generally high. However, these utilizations do not have a certain order and average distribution, and the initiative is given to the university and certain people. The usage of technology in academic studies facilitates producing new information and making inventions. Thus, as an innovation in the field, the higher education institution has to determine a policy regarding the active usage of education technology and social media in scholarly communication processes, and universities have to act within this policy and framework. After determining common rules and frameworks, establishing a national and international scholarly communication share platform where it will be possible to share

national and international publications, find partners and follow projects and conferences, and in this context, universities meeting in a common scholarly communication procedure will have importance in the enhancing and organizing of these processes countrywide. These will also contribute to the production and spreading of scientific information.

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8. APPENDIX A

Pilot Survey Question

Scholarly Communication Survey

Title :

Institution's Name :

Age :

Gender :

6. Do you use social media in your scholarly communication process?
    a. Yes
    b. No

7. What kind of content are you sharing on social media?

    ---

8. Are you conducting collaborative research or academic co-authoring with other scholars, using social media?
    a. Yes (Please give details on your research/writing)
    b. No

9. Which kind of content is convenient for you?
    a. New publications (articles, e-book, other).
    b. Career news, job openings.
    c. Scientific collaboration web sites and scientific associations.
    d. Conferences.
    e. New study areas.
    f. New projects and new project-groups in other countries.
    g. Other scientists and collaboration partners.

10. "Social media (LinkedIn, Facebook, Twitter, etc.) is useful and important for education in 21st century." Do you agree with this sentence? Please indicate why or why not!

Final Survey (Likert Scale)

Üniversitelerde Yüksek Düzeyde Teknoloji Okuryazarlığı

Çalıştığı Üniversite Yaş Cinsiyet

Ünvan: 1.Arş. Gör.,2. Öğr.Gör. , 3. Dr, 4. Yrd.Doç. Dr. , 5. Doç.Dr. ,6. Prof. Dr.

S1. Eğitim teknolojileri ve sosyal medya sitelerinden aşağıda listelenenlerden hangilerini akademik iletişim sürecinde kullanıyorsunuz?

LMS (Learning management system)	Pearson, Oxford, vb.. yayınevlerinin öğretmen veri tabanları	Facebook	Linkedin	Twitter
Academia.edu	Instagram	I-tunes (Apple)	Google Play	Youtube
Bloglar	Wikiler	Diğer belirtiniz …		

S2. Çalıştığınız üniversite teknolojik altyapısı ve olanaklarına bağlı olarak aşağıki belirtilenlerden hangilerini size sağlamaktadır?

İçerik yönetim sistemleri	Yayınevleri veri tabanları	Online açık erişim kaynakları	Akıllı tahta	Bilgisayar
İnternet	Youtube	Geniş bant aralığı	Teknoloji labratuarları	Online kütüphane
Laptop	Tablet	Projeksiyon	Diğer belirtiniz…	

S3. Kendimi "Yüksek Düzey Teknoloji Okuryazarı İnsan" yani teknolojiyi aktif olarak akademik çalışmalarında kullanan bir akademisyen olarak nitelendiriyorum.

Hiç katılmıyorum 1	Katılmıyorum 2	Kararsızım 3	Katılıyorum 4	Tamamen katılıyorum 5

S4. Aşağıdaki cümlelerden ifadeler için sizin için en uygun olan puanı 5 üzerinden seçer misiniz?

	Hiç katılmıyorum 1	Katılmıyorum 2	Kararsızım 3	Katılıyorum 4	Tamamen katılıyorum 5
1. Çalıştığım üniversitede teknolojik altyapının yüksek düzey teknoloji okuryazarlığını desteklediğini düşünüyorum.					
2. Derslerimin bazılarını uzaktan eğitim olarak planlayabiliyorum					
3. Sosyal medyayı akademik iletişim kurmak için ve eğitim öğretim sürecini desteklemek için kullanıyorum.					
	Hiç katıl	Katılm	Karar	Katılıy	Tamamen

	mıyorum 1	ıyorum 2	sızım 3	orum 4	katılıyorum 5
4. Eğitim teknolojilerini akademik iletişim kurmak için ve eğitim öğretim sürecini desteklemek için kullanıyorum.					
5. Sosyal medyayı akademik iletişim süreçlerinde kullanıyorum.					
6. Sosyal medyada bilimsel yayınlarımı paylaşıyorum.					
7. Görev yaptığım üniversitedeki teknolojik altyapının yüksek düzey teknoloji okuryazarlığını desteklediğini düşünüyorum.					
8. Verdiğim dersi uzaktan eğitim sayesinde evimden verebiliyorum					
9. Sosyal medyada yeni konferans duyurularını paylaşıyorum.					
10. Sosyal medyada üniversitenizdeki yenilikleri ve akademik bilgileri paylaşıyorum.					
11. Sosyal medyayı tanımadığım akademisyenlerle iletişim kurmak için kullanıyorum.					

12. Sosyal medyayı tanımadığım akademisyenlerle tanışıp ortak çalışmalar yapmak için kullanıyorum					
13. Sosyal medyayı yeni yayın ortamları bulmak ve alanım yenilikleri takip etmek için kullanıyorum.					
14. Sosyal medya da yeni kariyer olanaklarını ve yeni iş olanaklarını takip ediyorum.					
15. Sosyal medyayı gündemi ve yeni haberleri takip etmek için kullanıyorum.					
16. Bilimsel yayın ve kuruluşların web sitelerini ve derneklerinin sayfalarını takip ediyorum.					
17. Konferans duyurularını sosyal medya üzerinden takip ediyorum.					
18. Yeni çalışma alanlarını ve alanımda çalışan akademisyenlerin sosyal medya hesaplarını takip ediyorum.					
19. Sosyal medya üzerinden duyurusu yapılan yeni çalışma gruplarını ve proje gruplarını takip ediyorum.					
20. Sosyal medyanın (Linkedin, Facebook ve diğerleri) 21. Yüzyıl eğitim sisteminde önemli bir eğitim teknolojisi olduğunu düşünmüyorum.					
21. Sosyal medyanın kullanıcıları ve yorumları ile					

halkın ve kitlelerin nabzını tuttuğunu düşünüyorum.					
22. Sosyal medyanın güncel ve doğru bilgiler verdiğini bu sayede yenilikleri kolaylıkla takip edebileceğimi düşünüyorum.					
23. Sosyal medyayı öğrencilerimle iletişim kurmak ve bilgi paylaşımında bulunmak için kullanıyorum.					
24. Kendim ve öğrencilerim için sosyal medyanın yeni proje duyuruları, konferanslar ve yayınlara ulaşmak için önemli bir eğitim teknolojisi olduğunu düşünüyorum.					
25. Sosyal medyada paylaşılanları güvenilir buluyorum.					

9. APENDIX B

Indepth AnalysisQuestion

1. Could you share your opinions about sharing and spreading of information in academic area?
2. Could you share your opinions about scholarly communication?
3. What do you think about education technologies?
4. Do you use education technologies in scholarly communication process?
5. What is your presience about the form of education technologies that will be shaped in future?

Indepth Analysis Answers

Participant 1

Istanbul University – Associate Prof. - 45

I defend that the academic life's most important step of is information sharing. From this point of view i think that the information should be shared for academic knowledge improvoments.On the other hand there is always a possibility of shared information being stolen. Istrongly do care about the tablet usage and i am able to send lecture notes to my students or search anything instantly during lessons. We support technolgy usage exercises although our university doesn't have advanced technogical infastructure. In big classrooms only projection and desktop computers existing and i think that in the future the usage of technology will increase.

Participant 2

Istanbul University - Associate Prof. - 45

We should use education technologies. I think that it helps up to save from time especially in this era. By the way we can achieve much more in less time and easily communicate. It should be used but i don't know how efficient is it. I think that online courses are not proceeding in a effective way and stundents are not following lessons. They only study for to pass the exam and in the remainig time, they do not. Flipped classroom is only better for information transfer.I especially use word, projection and tablet applications. I use social media. Reaching students via social media is very easy because they spend most of their time in social media. I conduct connection with my students by social media. I track my academician friend's success, publishes and promotions over internet and social media.

Participant 3

Istanbul University – 33- Research Assistant

Acedemician's basic task is to share the newness and exercises. I mostly use academia-edu website in scholarly communication process. Thesis catalogue of YÖK is also another place where i usually follow. Furthermore European Union's practices is followed. Due to the being of Faculty Of Sciences, we follow and do common exercises with academicians especially from Finland and USA whose exercises we take as a sample

4. Participant

Istanbul University – 56 – Professor

I believe that the written researchs will completely be disaapeared to the increasing usage of technology in academic life. By the end of this period doing a research will be such easy but there would no new information to be produced and so i think that the end of history thesis will be real. From my point of view sharing things in academic life is necessary. Also academic life consists the basis of academic sharing. Academic cominication's important way is shown up when the acedemicians development process is related with academic sharing and follow up

Participant 5

Istanbul University - 48 - Professor

I think the rewarding information which will carry our country to future should be shared between academicians and academicians should carry about it. For example, i share my knowledge with people and it doesn't matter i have met before or not. I care about doing common studies with academicians from Linkedin and follow Project conferences. I mostly apply my copyright to my own study and then forward it to international platforms. I believe that e-books will be more utilized in future and publishing will go online. In the mean time academic publishing will live on digital platforms. I follow other academician's studies over social media.

Participant 6

Yeditepe University - Asocciate prof. - 38

We as being an academician, should keep in step with technological developments and every academician should follow technological developments. Hologram interviews will be provided

in future and side by side studies will be more easy. Student information systems are very important. I frequently use Linkedin to follow persons whose working area with mine. Academia edu is also similar and i search familiar people there. I follow up newly published documents in YOK's web page

Participant 7

Yeditepe University - Lecturer - 40

I believe that the technogy which is used under control will be beneficial. Technological sources are very important in scholarly communication process and researchs made in Libary will be replaced with digital resources. I prefered doing common studies in most of my studies, thus information spreaded to large mass. Common studies also improve the quality of academic researches.

Participant 8

Beykent University - Prof. - 64

I am disagree on scholarly communication process which are only conductued with technological tools. Acedemicians should come together on different symposiums, conferences and share their knowledge with each other. Social media is important area for knowledge and Academia.edu is my favorite. Digital settings is not challenging in our university but i communicate with my students over social media. I especially recommend them books and share conference notices.

Participant 9

Beykent University - Lecturer - 42

I think doing group studies is very important and the most important point for academician's evolution is group Works. Education Technologies are being used more and more to produce beter information. Technology usage in education will become regular in future. This opinion figured in my mind after being awared of Project which "students who take education in silicon valley" are being kept away from digital Technologies. I belive that technology should be applied in scholarly communication process but this process should not be implemented in education.

Participant 10

Plato University - Prof. - 58

I think studies should be done with whom you feel your self closer in academic area thus plagiarism will be prevented. 3D printers should be more used in academic researches. I belive that there would be no more academicians for teaching, only researcher academicians would existin future. I mostly use computer and tablet but our University only support for desktop computer and projection. Universities which have technogy classes will help us to improve.

Participant 11

Plato University - Associate Prof . - 48

Sharing of knowledge is very important in academic life. Equipping new generation with new knowledge is very important and this is the way of having mass knowledge, meanwhile information pollution shouldn't be created.Information should be created without information pollution, and data is the raw situation of information. Person of data processer is very important before data becomes information. Sharing of information is important for scholarly

communicaiton but this process must go on without conflicts between academicians. Technology should only be used for educational purposes and academicans should use software education materials.

Participant 12

Yeditepe University - Associate Prof. - 52

Technological instruments and learning systems used in scholary communication improves the quality of learning mechanism of students and communication process of academicians. Social media have also positive impact when it used for right information sharing otherwise it shouldn't be used if there is any doubt. We are living in the period of genereation shift. Technology is used more and more in every generation.

Participant 13

Beykent University - Prof. - 61

Sharing of information in academic life is important. Information consists the basis of academic life and thus information should be shared.Information sharing should not be restricted and shouldn't be used as financial situation.Books may be free of charge and information should be shared in everywhere and anytime. Scholarly communication is very important part of academic life. Academicians should communicate with each other by using social networks.

Participant 14

Marmara University - Assistant Prof . - 32

Scholarly communication is being more interactive by education technologies. However the way of use is not clear yet especially in our university. New generation academicians would be master of education Technologies. Technology is the very important part of the academic people daily life routine.

Participant 15

Marmara University - Assistant Prof. - 41

Although i am not very well at the usage of internet i use it in scholarly communication process. Academicians sometime withdrawn about the usage of these tecnologies but we use social media in our University. Tablet usage is limited, i sometime read book and print out. I prefer to underline printed documents and cannot study on tablet books. We can track the work progress via student information systems. We are being informed about happenings by recently send e-mails fom school mailing system. There may be a new online project in the future where all the academicians are submitted to. Thus a academcian can contact with other academicians.

Participant 16

Beykent University - Assistant Prof. - 38

I think information sharing is very important in scholarly communication. We are living in infomation and communication era. Social media plays information role for low class people. Information is being shared simultaneously with commonly used smart phones. Different

poeple from all over the world come together and different opinions arise. We do projects in partnership and teach foreign languages to students in Holland. In this process we use digital Networks.

Participant 17

Marmara University - Assistant Prof. - 29

I find education technologies usage facilitative and diffusive in schlolary communication process. I follow social media accounts and researh about my research subject, follow magazines online journals like Mediacat. I believe that online education will increase by development of education technologies. Online education provides the chance of comfort and easy learning. People bring up together their learnings with learning environment. Academicians will have the chance of doing more researches with the help of online education.

Participant 19

İstanbul University - Assistant Prof. - 36

I cared very much about the information sharing since i started my academic career. I believe that information increase when it is shared with others. We see that people use digital platforms in face to face communication and i especially think that academic communication is often occured in face to face. Education Technologies used more and more in these days and i take the advantage of academia edu for academic sharings. I use projection devices in presentations and online courses for personal development but i stand aloof from the sharings

in internet without non copyright sources. I think academic practices will increase with technological developments and social networks will be helpful in this process.

Participant 19

İstanbul University - Prof. - 59

Sharing is very important in academic life for information sharing and plagiarism is commonly faced issue in information sharing process. We should select the person carefually for information sharing to prevent plagiarism. I think education technologies is used more and more in academic area. Facebook and Linkedin are commonly used in academic area and i observe other academician's improvements form Linkedin. Sometimes search in universities web sites to follow their academic development. I use apple tablet and thus read e-book and make researches. I prefer tablet for it's benefit in research process and use onenote to transfer my notes into my article in a quick way.

Participant 20

Yeditepe University - Associate Prof. - 48

Production of information and sharing of it is very important in academic life for academic continuity. But some of academician use the ideas/words of another person as their own without crediting the source. So i don't prefer to share my own studies in academic life before getting it's copyrights. I think everything will move into online&digital platform in future and researches-sharings will come into prominence in digital atmosphere. Data bases will be formed in future like ULAKBİM and academicians will research in group studies.

Participant 21

Beykent University - Lecturer - 32

I think scholarly communication is spreading with digital technologies over and over. Especially social media changed the affinities in academic life thus people started to make group studies according to their new relations. For instance; you can meet a person over Linkedin or other social networks and attend to conferences. We use OIS(Student Information System) education technology in our university.The person who is responsible for the department, is being declared every week from mail group. So we can say that technology usage ratio for internal communication is very high over our university. I follow blogs related to our students, university and i think that the created ones wtih students and teachers are very useful and you can reach any kind of information over blogs. Conversely technology will reach to it's top point and technology usage ratio between academicians will change in future. By this process technology usage will fall into right place.

Participant 21

Beykent University - Research Assistant - 28

Information is being grow up for centruies like snowball. It is seen that sharing of information and spreadig it to every where is very important as producing it. Social media is the first step that come to mind while talking about education technologies. I use social media to communicate with my students, get in touch with my old academician friends and conference announcements. I don't keep daily spotlights over social media because i don't find it trustful.

Participant 22

Marmara University - Associate Prof. - 42

I think academic communication is very important but also think that academic communication should be conducted with convenient people. I use overhead projector and projection device in my lectures but i want to come together with my students in tablet equipped classes.

Participant 23

Bahçeşehir University - Lecturer - 36

I think academic information is not a self owned issue and most important feature of academician should be academic information sharing. Especially conferences, seminars and career days are right places for academicians to share their information. I believe that academicians who are the world formatives should share their know everytime but on the other hand copyrights should be considered.

Participant 24

Bahçeşehir University - Research Assistant - 25

I think scholarly communication is a two sided agreement which is based on goodwill. I prefer to work with academic colleagues which we feel closer to and also academicians like to work with other academicians whose philosophy is in the same way. For me, the most prefered choice among education technologies is reading e-books and searching in foreign university's web pages. I share useful links with my students in the beginning of semester and think that smart phones are very valuable education technology if they were used in proper way.

Participant 25

Istanbul University - Assistant Prof. - 36

I think students and teachers are taking the communication advantage of social media between each other. I share my academic knowledge over social media in order to reach mass people. I have been subscribed to data bases for e-booksand additonally we can read e-books in our University's library. I think the definition of education place will change in future due to the decrese in the size of technogical instruments.

Participant 26

Istanbul University - Assistant Prof. 42

Every development is being followed in our University in the meaning of education technology and academic sharings are being encouraged. Scientific Journal Support Board are doing regular studies in order to encourage academicians.We can have lessons over tablet with our students in tabet classes, other than that every class is equipped with desktop and laptop computer and lecturers have their own laptop too. I share my academic studies with other academicians over onenote and google drive.

Participant 27

Beykent University - Associate Prof. - 38

Academic scientific studies are being encouraged in our University and there is an emphasis on using latest technology. We work on bringing conferences and seminers to our country which are being organized in foreign countries. So we need to make plans with other

academicians about meetings and we mostly use facetime, skype, whatsup applications for cost restrictions.

Participant 28

Plato University - Lecturer - 45

I support the opinion of academic comminication's and digitialism's importance in academic life. Academicians can only be successful when communicate with each other. I intensely use Twitter, Linkedin, Facebook and Academia.edu. I am working in high tech level University. My University provides me tablet and laptop computer.

Participant 29

Bahçeşehir University - Assistant Prof. - 36

We are installing face to face talking applications to lecturer's laptops while providing cross border collaboration. I give special notice to publishing on social media in English language to reach more academician all over the world.

Participant 30

Istanbul University - Associate Prof.- 48

Lastly i watched apple commercial that was showing the tablet application and sharing of it with other group members group project. They were able to participate from their own home work on same project paper. That was incredible and i am dreaming such kind of education technology.

10. APPENDIX C

Table 58
University Type T Test

Group Statistics

	Üniv- Type	N	Mean	Std. Deviation	Std. Error Mean
Factor-1	Foundation University	111	3,4489	,91281	,08664
	State University	191	3,2400	,90749	,06566
Factor-2	Foundation University	111	3,8446	1,00003	,09492
	State University	191	3,5589	,88563	,06408
Factor-3	Foundation University	111	3,5788	,95107	,09027
	State University	191	3,4555	,91765	,06640
Factor-4	Foundation University	111	3,1757	1,27858	,12136
	State University	191	3,3429	1,05329	,07621
Factor-5	Foundation University	111	3,1059	1,04204	,09891
	State University	191	3,0353	,96163	,06958
Factor-6	Foundation University	111	3,9640	,92371	,08767
	State University	191	3,7513	,98525	,07129
S3	Foundation University	111	4,2342	,89397	,08485
	State University	191	3,9476	,79959	,05786

Table 59

University Type Independent Sample Test 1

Independent Samples Test 1

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df

Factor-1	Equal variances assumed	,550	,459	1,925	300
	Equal variances not assumed			1,922	228,931
Factor-2	Equal variances assumed	,760	,384	2,576	300
	Equal variances not assumed			2,495	208,098
Factor-3	Equal variances assumed	,019	,890	1,111	300
	Equal variances not assumed			1,101	223,372
Factor-4	Equal variances assumed	13,829	,000	-1,228	300
	Equal variances not assumed			-1,167	196,207
Factor-5	Equal variances assumed	1,631	,203	,596	300
	Equal variances not assumed			,583	215,295
Factor-6	Equal variances assumed	1,160	,282	1,850	300
	Equal variances not assumed			1,882	242,238
S3	Equal variances assumed	6,177	,013	2,874	300
	Equal variances not assumed			2,791	209,805

Table 60

University Type Independent Sample Test 2

Independent Samples Test

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
Factor-1	Equal variances assumed	,055	,20898	,10854	-,00462
	Equal variances not assumed	,056	,20898	,10871	-,00522
Factor-2	Equal variances assumed	,010	,28569	,11090	,06745
	Equal variances not assumed	,013	,28569	,11453	,05992
Factor-3	Equal variances assumed	,267	,12333	,11100	-,09511
	Equal variances not assumed	,272	,12333	,11206	-,09750
Factor-4	Equal variances assumed	,220	-,16726	,13619	-,43526
	Equal variances not assumed	,245	-,16726	,14330	-,44987
Factor-5	Equal variances assumed	,552	,07052	,11838	-,16245
	Equal variances not assumed	,560	,07052	,12093	-,16784
Factor-6	Equal variances assumed	,065	,21266	,11495	-,01356
	Equal variances not assumed	,061	,21266	,11300	-,00993
S3	Equal variances assumed	,004	,28659	,09971	,09037
	Equal variances not assumed	,006	,28659	,10270	,08413

Table 61
Group Statistics

Group Statistics

	Cinsiyet	N	Mean	Std. Deviation	Std. Error Mean
Factor-1	Men	140	3,2643	,93536	,07905
	Women	162	3,3621	,89465	,07029
Factor-2	Men	140	3,6321	,93946	,07940
	Women	162	3,6914	,93854	,07374
Factor-3	Men	140	3,4875	,94798	,08012
	Women	162	3,5123	,91774	,07210
Factor-4	Men	140	3,2464	1,15599	,09770
	Women	162	3,3117	1,13254	,08898
Factor-5	Men	140	3,0304	1,00782	,08518
	Women	162	3,0880	,97821	,07686
Factor-6	Men	140	3,7929	,98365	,08313
	Women	162	3,8611	,95431	,07498
S3	Men	140	4,0714	,90278	,07630
	Women	162	4,0370	,79508	,06247

Table 62 Group Statistics Independent Sapmles Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Factor--1	Equal variances assumed	,362	,548	-,928	300
	Equal variances not assumed			-,925	289,465
Factor-2	Equal variances assumed	,016	,899	-,547	300
	Equal variances not assumed			-,546	293,607
Factor-3	Equal variances assumed	,034	,855	-,231	300

	Equal variances not assumed			-,231	290,703
Factor-4	Equal variances assumed	,254	,615	-,495	300
	Equal variances not assumed			-,494	291,862
Factor-5	Equal variances assumed	,001	,974	-,503	300
	Equal variances not assumed			-,502	290,961
Factor-6	Equal variances assumed	,074	,786	-,611	300
	Equal variances not assumed			-,610	290,917
S3	Equal variances assumed	1,375	,242	,352	300
	Equal variances not assumed			,349	279,413

Table 63

Group Statistics Independent Sapmles Test 2

Independent Samples Test

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
Factor--1	Equal variances assumed	,354	-,09785	,10544	-,30535
	Equal variances not assumed	,356	-,09785	,10578	-,30606
Factor-2	Equal variances assumed	,585	-,05922	,10835	-,27244
	Equal variances not assumed	,585	-,05922	,10836	-,27247
Factor-3	Equal variances assumed	,817	-,02485	,10753	-,23646
	Equal variances not assumed	,818	-,02485	,10779	-,23699
Factor-4	Equal variances assumed	,621	-,06530	,13195	-,32496
	Equal variances not assumed	,622	-,06530	,13215	-,32538
Factor-5	Equal variances assumed	,615	-,05761	,11448	-,28288
	Equal variances not assumed	,616	-,05761	,11472	-,28340
Factor-6	Equal variances assumed	,542	-,06825	,11170	-,28807
	Equal variances not assumed	,543	-,06825	,11195	-,28859
S3	Equal variances assumed	,725	,03439	,09770	-,15788
	Equal variances not assumed	,728	,03439	,09861	-,15972

Table 64 Age T-Test

Group Statistics

	Age2	N	Mean	Std. Deviation	Std. Error Mean
Factor-1	1,00	161	3,4203	,80904	,06376
	2,00	141	3,1986	1,00986	,08505
Factor-2	1,00	161	3,7376	,91890	,07242
	2,00	141	3,5798	,95540	,08046
Factor-3	1,00	161	3,5807	,82519	,06503
	2,00	141	3,4096	1,03306	,08700
Factor-4	1,00	161	3,4255	1,07560	,08477
	2,00	141	3,1170	1,19618	,10074
Factor-5	1,00	161	3,1460	,96524	,07607
	2,00	141	2,9645	1,01400	,08539
Factor-6	1,00	161	3,9410	,85400	,06730
	2,00	141	3,7021	1,07068	,09017
S3	1,00	161	4,1925	,74595	,05879
	2,00	141	3,8936	,92352	,07777

Table 65

Age Independent Sapmles Test 1

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Factor-1	Equal variances assumed	9,203	,003	2,116	300
	Equal variances not assumed			2,086	267,632
Factor-2	Equal variances assumed	2,177	,141	1,461	300

	Equal variances not assumed			1,458	291,386
Factor-3	Equal variances assumed	10,029	,002	1,599	300
	Equal variances not assumed			1,576	267,179
Factor-4	Equal variances assumed	2,334	,128	2,359	300
	Equal variances not assumed			2,343	283,907
Factor-5	Equal variances assumed	,460	,498	1,592	300
	Equal variances not assumed			1,586	290,365
Factor-6	Equal variances assumed	9,834	,002	2,155	300
	Equal variances not assumed			2,123	266,955
S3	Equal variances assumed	1,634	,202	3,109	300
	Equal variances not assumed			3,066	268,882

Table 66
Age Independent Sample Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
Factor-1	Equal variances assumed	,035	,22171	,10476	,01554

	Equal variances not assumed	,038	,22171	,10629	,01243
Factor-2	Equal variances assumed	,145	,15779	,10797	-,05469
	Equal variances not assumed	,146	,15779	,10825	-,05526
Factor-3	Equal variances assumed	,111	,17117	,10704	-,03947
	Equal variances not assumed	,116	,17117	,10862	-,04269
Factor-4	Equal variances assumed	,019	,30844	,13073	,05117
	Equal variances not assumed	,020	,30844	,13166	,04930
Factor-5	Equal variances assumed	,113	,18142	,11399	-,04290
	Equal variances not assumed	,114	,18142	,11436	-,04366
Factor-6	Equal variances assumed	,032	,23887	,11087	,02069
	Equal variances not assumed	,035	,23887	,11252	,01733
S3	Equal variances assumed	,002	,29893	,09614	,10973
	Equal variances not assumed	,002	,29893	,09749	,10698

Table 67

LMS User T-Test

Group Statistics

	S_1_LMS	N	Mean	Std. Deviation	Std. Error Mean
Factor-1	Evet	133	3,5150	,93799	,08133
	Hayır	169	3,1607	,86505	,06654
Factor-2	Evet	133	3,9530	,92121	,07988
	Hayır	169	3,4364	,88935	,06841

Factor-3	Evet	133	3,6128	1,02223	,08864
	Hayır	169	3,4127	,84392	,06492
Factor-4	Evet	133	3,4211	1,20423	,10442
	Hayır	169	3,1716	1,08157	,08320
Factor-5	Evet	133	3,2538	1,06600	,09243
	Hayır	169	2,9098	,90200	,06938
Factor-6	Evet	133	3,9887	1,00842	,08744
	Hayır	169	3,7041	,91680	,07052
S3	Evet	133	4,3233	,78382	,06797
	Hayır	169	3,8402	,83340	,06411

Table 68

LMS Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Df
Factor-1	Equal variances assumed	1,084	,299	3,404	300
	Equal variances not assumed			3,371	272,072
Factor - 2	Equal variances assumed	,702	,403	4,933	300
	Equal variances not assumed			4,912	278,803
Factor-3	Equal variances assumed	6,625	,011	1,863	300

	Equal variances not assumed			1,821	254,134
Factor-4	Equal variances assumed	1,619	,204	1,892	300
	Equal variances not assumed			1,868	267,946
Factor-5	Equal variances assumed	6,237	,013	3,036	300
	Equal variances not assumed			2,976	258,243
Factor-6	Equal variances assumed	,234	,629	2,562	300
	Equal variances not assumed			2,533	269,861
S3	Equal variances assumed	2,202	,139	5,133	300
	Equal variances not assumed			5,170	290,618

Table 68

LMS Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
Factor-1	Equal variances assumed	,001	,35429	,10408	,14948

	Equal variances not assumed	,001	,35429	,10509	,14740
Factor-2	Equal variances assumed	,000	,51662	,10473	,31052
	Equal variances not assumed	,000	,51662	,10517	,30959
Factor-3	Equal variances assumed	,063	,20006	,10741	-,01131
	Equal variances not assumed	,070	,20006	,10987	-,01631
Factor-4	Equal variances assumed	,059	,24945	,13181	-,00994
	Equal variances not assumed	,063	,24945	,13351	-,01341
Factor-5	Equal variances assumed	,003	,34400	,11331	,12101
	Equal variances not assumed	,003	,34400	,11558	,11640
Factor-6	Equal variances assumed	,011	,28458	,11107	,06601
	Equal variances not assumed	,012	,28458	,11234	,06341
S3	Equal variances assumed	,000	,48307	,09412	,29786
	Equal variances not assumed	,000	,48307	,09343	,29919

Table 69

Pearson Oxford T-Test

Group Statistics

	S1_2_Pearson-Oxford	N	Mean	Std. Deviation	Std. Error Mean
Factor-1	Yes	117	3,5356	,92843	,08583
	No	185	3,1784	,87867	,06460
Factor-2	Yes	117	3,9017	,94399	,08727
	No	185	3,5135	,90467	,06651

Factor-3	Yes	117	3,6752	,97339	,08999
	No	185	3,3905	,88725	,06523
Factor-4	Yes	117	3,5256	1,15192	,10650
	No	185	3,1270	1,11137	,08171
Factor-5	Yes	117	3,3419	1,06046	,09804
	No	185	2,8838	,90290	,06638
Factor-6	Yes	117	4,0684	,93520	,08646
	No	185	3,6784	,95869	,07048
S3	Yes	117	4,4274	,76919	,07111
	No	185	3,8162	,80674	,05931

Table 70

Pearson Oxford Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Factor-1	Equal variances assumed	,343	,558	3,367	300
	Equal variances not assumed			3,325	236,746
Factor-2	Equal variances assumed	,021	,886	3,572	300
	Equal variances not assumed			3,538	239,048
Factor-3	Equal variances assumed	1,703	,193	2,615	300
	Equal variances not assumed			2,561	229,913
Factor-4	Equal variances assumed	,370	,543	2,994	300
	Equal variances not assumed			2,970	240,279
Factor-5	Equal variances assumed	6,234	,013	4,011	300

	Equal variances not assumed			3,869	217,875
Factor-6	Equal variances assumed	,331	,566	3,477	300
	Equal variances not assumed			3,496	251,416
S3	Equal variances assumed	,641	,424	6,529	300
	Equal variances not assumed			6,600	255,562

Table 71

Pearson Oxford Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
Factor-1	Equal variances assumed	,001	,35723	,10610	,14844
	Equal variances not assumed	,001	,35723	,10743	,14560
Factor-2	Equal variances assumed	,000	,38820	,10868	,17433
	Equal variances not assumed	,000	,38820	,10973	,17204
Factor-3	Equal variances assumed	,009	,28467	,10885	,07047
	Equal variances not assumed	,011	,28467	,11115	,06568
Factor-4	Equal variances assumed	,003	,39861	,13315	,13659

	Equal variances not assumed	,003	,39861	,13423	,13420
Factor-5	Equal variances assumed	,000	,45810	,11421	,23335
	Equal variances not assumed	,000	,45810	,11840	,22474
Factor-6	Equal variances assumed	,001	,39000	,11218	,16925
	Equal variances not assumed	,001	,39000	,11155	,17031
S3	Equal variances assumed	,000	,61113	,09360	,42693
	Equal variances not assumed	,000	,61113	,09260	,42878

Table 72

Facebook T-Test

Group Statistics

	S1_3_Facebook	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	240	3,4181	,85854	,05542
	No	62	2,9247	1,01656	,12910
factor2	Yes	240	3,7719	,87581	,05653
	No	62	3,2460	1,05435	,13390
factor3	Yes	240	3,6010	,89714	,05791
	No	62	3,1129	,96206	,12218
factor4	Yes	240	3,4167	1,08206	,06985
	No	62	2,7581	1,22388	,15543
factor5	Yes	240	3,1354	,97773	,06311
	No	62	2,7742	,99662	,12657
factor6	Yes	240	3,8792	,93176	,06015
	No	62	3,6371	1,07950	,13710
S3	Yes	240	4,1083	,82630	,05334
	No	62	3,8387	,89064	,11311

Table 73

Facebook Independent Samples Test 1

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	7,218	,008	3,878	300
	Equal variances not assumed			3,511	84,816
factor2	Equal variances assumed	6,918	,009	4,035	300
	Equal variances not assumed			3,618	84,003
factor3	Equal variances assumed	,130	,719	3,762	300
	Equal variances not assumed			3,610	90,321
factor4	Equal variances assumed	4,400	,037	4,156	300
	Equal variances not assumed			3,865	87,215
factor5	Equal variances assumed	,160	,689	2,583	300
	Equal variances not assumed			2,554	93,627
factor6	Equal variances assumed	2,669	,103	1,763	300

	Equal variances not assumed			1,617	85,928
S3	Equal variances assumed	,552	,458	2,254	300
	Equal variances not assumed			2,156	90,008

Table 74

Facebook Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,49332	,12721	,24299
	Equal variances not assumed	,001	,49332	,14050	,21397
factor2	Equal variances assumed	,000	,52591	,13034	,26940
	Equal variances not assumed	,001	,52591	,14535	,23687

factor3	Equal variances assumed	,000	,48814	,12974	,23282
	Equal variances not assumed	,001	,48814	,13521	,21953
factor4	Equal variances assumed	,000	,65860	,15847	,34675
	Equal variances not assumed	,000	,65860	,17041	,31991
factor5	Equal variances assumed	,010	,36122	,13984	,08603
	Equal variances not assumed	,012	,36122	,14143	,08039
factor6	Equal variances assumed	,079	,24207	,13728	-,02809
	Equal variances not assumed	,110	,24207	,14971	-,05555
S3	Equal variances assumed	,025	,26962	,11964	,03419
	Equal variances not assumed	,034	,26962	,12506	,02118

Table 75
Linkedin T-Test

Group Statistics

	S1_4_Linkedin	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	171	3,4659	,83625	,06395
	No	131	3,1221	,97486	,08517
factor2	Yes	171	3,8173	,84096	,06431
	No	131	3,4637	1,02005	,08912
factor3	Yes	171	3,6360	,87119	,06662

	No	131	3,3244	,97798	,08545
factor4	Yes	171	3,5673	,99107	,07579
	No	131	2,9084	1,21971	,10657
factor5	Yes	171	3,2105	,93517	,07151
	No	131	2,8664	1,03045	,09003
factor6	Yes	171	3,9444	,89187	,06820
	No	131	3,6794	1,04158	,09100
S3	Yes	171	4,2398	,71607	,05476
	No	131	3,8092	,93738	,08190

Table 76 Linkedin Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	7,863	,005	3,293	300
	Equal variances not assumed			3,227	255,734
factor2	Equal variances assumed	8,123	,005	3,299	300
	Equal variances not assumed			3,217	249,001
factor3	Equal variances assumed	2,037	,155	2,920	300
	Equal variances not assumed			2,875	262,046
factor4	Equal variances assumed	12,971	,000	5,177	300
	Equal variances not assumed			5,038	246,533
factor5	Equal variances assumed	2,526	,113	3,032	300
	Equal variances not assumed			2,993	265,098

factor6	Equal variances assumed	2,926	,088	2,379	300
	Equal variances not assumed			2,331	255,428
S3	Equal variances assumed	12,942	,000	4,526	300
	Equal variances not assumed			4,371	236,127

Table 77
Linkedin Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,001	,34375	,10438	,13835
	Equal variances not assumed	,001	,34375	,10651	,13400
factor2	Equal variances assumed	,001	,35351	,10715	,14265
	Equal variances not assumed	,001	,35351	,10990	,13705
factor3	Equal variances assumed	,004	,31154	,10670	,10155
	Equal variances not assumed	,004	,31154	,10835	,09819
factor4	Equal variances assumed	,000	,65885	,12726	,40842
	Equal variances not assumed	,000	,65885	,13077	,40129
factor5	Equal variances assumed	,003	,34411	,11351	,12074

	Equal variances not assumed	,003	,34411	,11498	,11773
factor6	Equal variances assumed	,018	,26506	,11142	,04579
	Equal variances not assumed	,021	,26506	,11372	,04110
S3	Equal variances assumed	,000	,43061	,09513	,24339
	Equal variances not assumed	,000	,43061	,09852	,23652

Table 78

Twitter T-Test

Group Statistics

	S1_5_Twitter	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	140	3,5000	,81943	,06925
	No	162	3,1584	,96233	,07561
factor2	Yes	140	3,8411	,88615	,07489
	No	162	3,5108	,95689	,07518
factor3	Yes	140	3,7107	,85098	,07192
	No	162	3,3194	,96009	,07543
factor4	Yes	140	3,5143	1,01773	,08601
	No	162	3,0802	1,20675	,09481
factor5	Yes	140	3,2589	1,00063	,08457
	No	162	2,8904	,95266	,07485
factor6	Yes	140	3,8964	1,03967	,08787
	No	162	3,7716	,89875	,07061
S3	Yes	140	4,3071	,75766	,06403
	No	162	3,8333	,85792	,06740

Table 79

Twitter Independent Samples Test 1

Independent Samples Test 1

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df

factor1	Equal variances assumed	5,156	,024	3,293	300
	Equal variances not assumed			3,331	299,939
factor2	Equal variances assumed	,422	,517	3,095	300
	Equal variances not assumed			3,112	298,550
Factor 3	Equal variances assumed	1,284	,258	3,721	300
	Equal variances not assumed			3,754	299,801
factor4	Equal variances assumed	7,305	,007	3,349	300
	Equal variances not assumed			3,391	299,830
factor5	Equal variances assumed	1,021	,313	3,275	300
	Equal variances not assumed			3,263	288,971
factor6	Equal variances assumed	2,007	,158	1,119	300
	Equal variances not assumed			1,107	276,827
S3	Equal variances assumed	,248	,619	5,050	300
	Equal variances not assumed			5,096	299,853

Table 80 Twitter Independent Samples Test 2

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,001	,34156	,10373	,13743
	Equal variances not assumed	,001	,34156	,10253	,13979
factor2	Equal variances assumed	,002	,33027	,10671	,12026
	Equal variances not assumed	,002	,33027	,10612	,12143
factor3	Equal variances assumed	,000	,39127	,10514	,18436
	Equal variances not assumed	,000	,39127	,10422	,18617
factor4	Equal variances assumed	,001	,43404	,12960	,17899
	Equal variances not assumed	,001	,43404	,12801	,18212
factor5	Equal variances assumed	,001	,36850	,11253	,14705
	Equal variances not assumed	,001	,36850	,11293	,14622
factor6	Equal variances assumed	,264	,12482	,11154	-,09468
	Equal variances not assumed	,269	,12482	,11273	-,09708
S3	Equal variances assumed	,000	,47381	,09382	,28919
	Equal variances not assumed	,000	,47381	,09297	,29085

Table 81 Academia T-Test

Group Statistics

	S1_6_Academia	N	Mean	Std. Deviation	Std. Error Mean
factor1	Evet	85	3,6667	,67112	,07279
	Hayır	217	3,1797	,95955	,06514
factor2	Evet	85	3,9088	,81270	,08815
	Hayır	217	3,5680	,96749	,06568
factor3	Evet	85	3,6000	,74821	,08116
	Hayır	217	3,4620	,99157	,06731
factor4	Evet	85	3,6353	,93347	,10125
	Hayır	217	3,1429	1,18746	,08061
factor5	Evet	85	3,2706	1,02514	,11119
	Hayır	217	2,9793	,96713	,06565
factor6	Evet	85	3,9941	,89806	,09741
	Hayır	217	3,7650	,98722	,06702
S3	Evet	85	4,3059	,63665	,06905
	Hayır	217	3,9539	,89634	,06085

Table 82

Academia Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	13,195	,000	4,284	300
	Equal variances not assumed			4,985	218,023
factor2	Equal variances assumed	4,876	,028	2,874	300
	Equal variances not assumed			3,101	181,407
factor3	Equal variances assumed	10,846	,001	1,160	300

	Equal variances not assumed			1,309	202,129
factor4	Equal variances assumed	9,091	,003	3,430	300
	Equal variances not assumed			3,805	193,937
factor5	Equal variances assumed	1,575	,210	2,314	300
	Equal variances not assumed			2,256	145,883
factor6	Equal variances assumed	1,185	,277	1,859	300
	Equal variances not assumed			1,938	167,727
S3	Equal variances assumed	1,789	,182	3,307	300
	Equal variances not assumed			3,824	214,737

Table 83

Academia Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,48694	,11366	,26327
	Equal variances not assumed	,000	,48694	,09768	,29442
factor2	Equal variances assumed	,004	,34085	,11859	,10749

	Equal variances not assumed	,002	,34085	,10993	,12395
factor3	Equal variances assumed	,247	,13802	,11898	-,09613
	Equal variances not assumed	,192	,13802	,10544	-,06988
factor4	Equal variances assumed	,001	,49244	,14359	,20987
	Equal variances not assumed	,000	,49244	,12942	,23719
factor5	Equal variances assumed	,021	,29133	,12587	,04362
	Equal variances not assumed	,026	,29133	,12913	,03612
factor6	Equal variances assumed	,064	,22914	,12323	-,01337
	Equal variances not assumed	,054	,22914	,11824	-,00428
S3	Equal variances assumed	,001	,35197	,10644	,14250
	Equal variances not assumed	,000	,35197	,09204	,17055

Table 84

Instagram T-Test

Group Statistics

	S1_7_Instagram	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	76	3,6930	,75033	,08607
	No	225	3,1881	,93151	,06210
factor2	Yes	76	4,0362	,83037	,09525
	No	225	3,5344	,94028	,06269
factor3	Yes	76	3,7599	,78575	,09013
	No	225	3,4133	,96231	,06415
factor4	Yes	76	3,5987	,89450	,10261

	No	225	3,1667	1,19336	,07956
factor5	Yes	76	3,4408	,95382	,10941
	No	225	2,9333	,97428	,06495
factor6	Yes	76	4,1711	,88526	,10155
	No	225	3,7089	,96636	,06442
S3	Yes	76	4,3026	,76629	,08790
	No	225	3,9733	,85524	,05702

Table 85 Instagram Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	3,085	,080	4,278	299
	Equal variances not assumed			4,757	158,988
factor2	Equal variances assumed	,578	,448	4,138	299
	Equal variances not assumed			4,400	144,934
factor3	Equal variances assumed	4,122	,043	2,835	299
	Equal variances not assumed			3,132	156,773
factor4	Equal variances assumed	11,454	,001	2,892	299
	Equal variances not assumed			3,327	171,528
factor5	Equal variances assumed	,010	,922	3,946	299
	Equal variances not assumed			3,988	131,701
factor6	Equal variances assumed	,239	,625	3,680	299
	Equal variances not assumed			3,843	139,935

S3	Equal variances assumed	,442	,507	2,977	299
	Equal variances not assumed			3,143	142,918

Table 86

Instagram Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,50483	,11802	,27258
	Equal variances not assumed	,000	,50483	,10613	,29522
factor2	Equal variances assumed	,000	,50174	,12126	,26311
	Equal variances not assumed	,000	,50174	,11403	,27637
factor3	Equal variances assumed	,005	,34654	,12222	,10601
	Equal variances not assumed	,002	,34654	,11063	,12801
factor4	Equal variances assumed	,004	,43202	,14937	,13806
	Equal variances not assumed	,001	,43202	,12984	,17574

factor5	Equal variances assumed	,000	,50746	,12859	,25441
	Equal variances not assumed	,000	,50746	,12724	,25576
factor6	Equal variances assumed	,000	,46216	,12560	,21500
	Equal variances not assumed	,000	,46216	,12026	,22441
S3	Equal variances assumed	,003	,32930	,11063	,11159
	Equal variances not assumed	,002	,32930	,10477	,12220

Table 87
Itunes T-Test

Group Statistics

	S1_8_Itunes	N	Mean	Std. Deviation	Std. Error Mean
factor	Yes	45	3,9111	,83907	,12508
	No	256	3,2109	,88856	,05553
factor2	Yes	45	4,0667	,85513	,12748
	No	256	3,5898	,93554	,05847
factor3	Yes	45	3,8278	,80626	,12019
	No	256	3,4434	,94205	,05888
factor4	Yes	45	3,6111	1,13763	,16959
	No	256	3,2168	1,13192	,07075
factor5	Yes	45	3,6611	,92650	,13811
	No	256	2,9561	,96750	,06047
factor6	Yes	45	4,1333	1,03573	,15440
	No	256	3,7715	,94533	,05908
S3	Yes	45	4,5778	,62118	,09260
	No	256	3,9648	,84641	,05290

Table 88 Itunes Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,157	,692	4,914	299
	Equal variances not assumed			5,116	62,637
factor2	Equal variances assumed	,829	,363	3,192	299
	Equal variances not assumed			3,400	63,974
factor3	Equal variances assumed	1,903	,169	2,576	299
	Equal variances not assumed			2,872	66,986
factor4	Equal variances assumed	,028	,867	2,154	299
	Equal variances not assumed			2,146	60,331
factor5	Equal variances assumed	,762	,383	4,536	299
	Equal variances not assumed			4,676	62,091
factor6	Equal variances assumed	,394	,531	2,334	299
	Equal variances not assumed			2,189	57,617
S3	Equal variances assumed	,194	,660	4,640	299
	Equal variances not assumed			5,747	76,010

Table 89

Itunes Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,70017	,14248	,41978
	Equal variances not assumed	,000	,70017	,13686	,42666
factor2	Equal variances assumed	,002	,47682	,14938	,18285
	Equal variances not assumed	,001	,47682	,14025	,19665
factor3	Equal variances assumed	,010	,38442	,14925	,09071
	Equal variances not assumed	,005	,38442	,13384	,11728
factor4	Equal variances assumed	,032	,39431	,18310	,03398
	Equal variances not assumed	,036	,39431	,18375	,02680
factor5	Equal variances assumed	,000	,70506	,15543	,39918
	Equal variances not assumed	,000	,70506	,15077	,40368
factor6	Equal variances assumed	,020	,36185	,15504	,05674
	Equal variances not assumed	,033	,36185	,16532	,03089
S3	Equal variances assumed	,000	,61293	,13209	,35299
	Equal variances not assumed	,000	,61293	,10664	,40053

Table 90

Google Play T-Test

Group Statistics

	S1_9_GooglePlay	N	Mean	Std. Deviation	Std. Error Mean
factor1	Evet	33	3,6616	,83384	,14515
	Hayır	268	3,2730	,91673	,05600
factor2	Evet	33	3,9470	,85868	,14948
	Hayır	268	3,6259	,94302	,05760
factor3	Evet	33	3,8409	,77766	,13537
	Hayır	268	3,4590	,94199	,05754
factor4	Evet	33	3,6818	,78877	,13731
	Hayır	268	3,2257	1,16695	,07128
factor5	Evet	33	3,4848	,96610	,16818
	Hayır	268	3,0093	,98486	,06016
factor6	Evet	33	4,0758	1,00872	,17560
	Hayır	268	3,7948	,95833	,05854
S3	Evet	33	4,3636	,60302	,10497
	Hayır	268	4,0187	,86312	,05272

Table 91 Google Play Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,314	,576	2,319	299
	Equal variances not assumed			2,498	42,122
factor2	Equal variances assumed	,451	,502	1,862	299
	Equal variances not assumed			2,004	42,099
factor3	Equal variances assumed	1,553	,214	2,236	299

	Equal variances not assumed			2,597	44,434
factor4	Equal variances assumed	9,473	,002	2,183	299
	Equal variances not assumed			2,948	51,128
factor5	Equal variances assumed	,001	,980	2,622	299
	Equal variances not assumed			2,662	40,634
factor6	Equal variances assumed	,013	,909	1,580	299
	Equal variances not assumed			1,518	39,450
S3	Equal variances assumed	,397	,529	2,228	299
	Equal variances not assumed			2,937	49,801

Table 92

Google Play Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,021	,38861	,16755	,05887
	Equal variances not assumed	,016	,38861	,15558	,07466
factor2	Equal variances assumed	,064	,32104	,17237	-,01818

	Equal variances not assumed	,052	,32104	,16019	-,00222
factor3	Equal variances assumed	,026	,38195	,17080	,04584
	Equal variances not assumed	,013	,38195	,14710	,08558
factor4	Equal variances assumed	,030	,45607	,20893	,04491
	Equal variances not assumed	,005	,45607	,15471	,14550
factor5	Equal variances assumed	,009	,47552	,18132	,11869
	Equal variances not assumed	,011	,47552	,17861	,11470
factor6	Equal variances assumed	,115	,28098	,17782	-,06895
	Equal variances not assumed	,137	,28098	,18510	-,09328
S3	Equal variances assumed	,027	,34498	,15481	,04033
	Equal variances not assumed	,005	,34498	,11747	,10901

Table 93

Youtube T-Test

Group Statistics

	S1_10_Youtube	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	149	3,3937	,89212	,07309
	No	153	3,2418	,93070	,07524
factor2	Yes	149	3,6812	,95368	,07813
	No	153	3,6471	,92504	,07479
factor3	Yes	149	3,5403	,93499	,07660
	No	153	3,4624	,92737	,07497
factor4	Yes	149	3,3758	1,06528	,08727
	No	153	3,1895	1,20853	,09770
factor5	Yes	149	3,1124	,98358	,08058

	No	153	3,0114	,99849	,08072
factor6	Yes	149	3,7953	,98127	,08039
	No	153	3,8627	,95497	,07720
S3	Yes	149	4,1946	,76827	,06294
	No	153	3,9150	,89551	,07240

Table 94

Youtube Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,877	,350	1,447	300
	Equal variances not assumed			1,448	299,926
factor2	Equal variances assumed	,366	,546	,316	300
	Equal variances not assumed			,316	299,027
factor3	Equal variances assumed	,148	,701	,726	300
	Equal variances not assumed			,726	299,638
factor4	Equal variances assumed	4,146	,043	1,420	300
	Equal variances not assumed			1,422	297,081
factor5	Equal variances assumed	,028	,867	,885	300

	Equal variances not assumed			,885	299,960
factor6	Equal variances assumed	,656	,419	-,605	300
	Equal variances not assumed			-,605	299,136
S3	Equal variances assumed	1,470	,226	2,909	300
	Equal variances not assumed			2,915	295,328

Table 95

Youtube Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,149	,15191	,10495	-,05463
	Equal variances not assumed	,149	,15191	,10489	-,05452
factor2	Equal variances assumed	,752	,03415	,10811	-,17860
	Equal variances not assumed	,752	,03415	,10815	-,17869

factor3	Equal variances assumed	,468	,07785	,10717	-,13305
	Equal variances not assumed	,468	,07785	,10718	-,13308
factor4	Equal variances assumed	,157	,18630	,13122	-,07194
	Equal variances not assumed	,156	,18630	,13100	-,07152
factor5	Equal variances assumed	,377	,10098	,11408	-,12352
	Equal variances not assumed	,377	,10098	,11406	-,12348
factor6	Equal variances assumed	,545	-,06744	,11142	-,28670
	Equal variances not assumed	,546	-,06744	,11146	-,28678
S3	Equal variances assumed	,004	,27960	,09613	,09043
	Equal variances not assumed	,004	,27960	,09593	,09080

Table 96

Blogs T-Test

Group Statistics

	S1_11_Blogs	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	119	3,5098	,80204	,07352
	No	183	3,1913	,96069	,07102
factor2	Yes	119	3,9118	,74475	,06827
	No	183	3,5027	1,01432	,07498
factor3	Yes	119	3,6239	,78443	,07191
	No	183	3,4208	1,00814	,07452
factor4	Yes	119	3,5714	1,01740	,09327
	No	183	3,0929	1,18117	,08731
factor5	Yes	119	3,2794	,96780	,08872
	No	183	2,9194	,98233	,07262
factor6	Yes	119	3,9202	,94102	,08626

	No	183	3,7705	,98159	,07256
S3	Yes	119	4,2269	,75281	,06901
	No	183	3,9399	,88435	,06537

Table 97

Blogs Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	4,785	,029	3,000	300
	Equal variances not assumed			3,116	281,839
factor2	Equal variances assumed	16,582	,000	3,785	300
	Equal variances not assumed			4,034	295,551
factor3	Equal variances assumed	12,189	,001	1,862	300
	Equal variances not assumed			1,962	290,401
factor4	Equal variances assumed	6,174	,014	3,629	300
	Equal variances not assumed			3,746	277,354
factor5	Equal variances assumed	,111	,739	3,130	300
	Equal variances not assumed			3,140	254,895
factor6	Equal variances assumed	,161	,689	1,316	300
	Equal variances not assumed			1,328	259,747

S3	Equal variances assumed	,560	,455	2,918	300
	Equal variances not assumed			3,019	279,089

Table 98

Blogs Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,003	,31855	,10618	,10960
	Equal variances not assumed	,002	,31855	,10222	,11734
factor2	Equal variances assumed	,000	,40903	,10808	,19634
	Equal variances not assumed	,000	,40903	,10141	,20947
factor3	Equal variances assumed	,064	,20318	,10912	-,01155
	Equal variances not assumed	,051	,20318	,10356	-,00064
factor4	Equal variances assumed	,000	,47853	,13185	,21907
	Equal variances not assumed	,000	,47853	,12776	,22703
factor5	Equal variances assumed	,002	,36001	,11501	,13368

	Equal variances not assumed	,002	,36001	,11465	,13424
factor6	Equal variances assumed	,189	,14968	,11374	-,07415
	Equal variances not assumed	,185	,14968	,11272	-,07229
S3	Equal variances assumed	,004	,28700	,09834	,09347
	Equal variances not assumed	,003	,28700	,09506	,09988

Table 99 Wikis T-Test

Group Statistics

	S1_12_Wikis	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	65	3,5897	,81067	,10055
	No	237	3,2419	,92737	,06024
factor2	Yes	65	3,8231	,95066	,11791
	No	237	3,6203	,93161	,06051
factor3	Yes	65	3,8462	,79512	,09862
	No	237	3,4061	,94381	,06131
factor4	Yes	65	3,6077	,89045	,11045
	No	237	3,1920	1,18789	,07716
factor5	Yes	65	3,4269	,92779	,11508
	No	237	2,9610	,98576	,06403
factor6	Yes	65	4,1538	,77016	,09553
	No	237	3,7405	,99744	,06479
S3	Yes	65	4,3077	,76899	,09538
	No	237	3,9831	,85354	,05544

Table 100

Wikis Independent Samples Test 1

Independent Samples Test 1

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df

factor1	Equal variances assumed	1,040	,309	2,749	300
	Equal variances not assumed			2,967	114,195
factor2	Equal variances assumed	,001	,976	1,548	300
	Equal variances not assumed			1,530	100,266
factor3	Equal variances assumed	2,400	,122	3,438	300
	Equal variances not assumed			3,789	118,232
factor4	Equal variances assumed	8,983	,003	2,625	300
	Equal variances not assumed			3,085	133,121
factor5	Equal variances assumed	,211	,647	3,418	300
	Equal variances not assumed			3,538	106,984
factor6	Equal variances assumed	4,205	,041	3,096	300
	Equal variances not assumed			3,581	129,021
S3	Equal variances assumed	,349	,555	2,772	300
	Equal variances not assumed			2,942	111,116

Table 101

Wikis Independent Samples Test 2

Independent Samples Test 2

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,006	,34783	,12654	,09882
	Equal variances not assumed	,004	,34783	,11721	,11563
factor2	Equal variances assumed	,123	,20282	,13101	-,05500
	Equal variances not assumed	,129	,20282	,13254	-,06012
factor3	Equal variances assumed	,001	,44004	,12799	,18816
	Equal variances not assumed	,000	,44004	,11612	,21008
factor4	Equal variances assumed	,009	,41571	,15836	,10407
	Equal variances not assumed	,002	,41571	,13473	,14922
factor5	Equal variances assumed	,001	,46595	,13633	,19767
	Equal variances not assumed	,001	,46595	,13169	,20489
factor6	Equal variances assumed	,002	,41334	,13350	,15062
	Equal variances not assumed	,000	,41334	,11543	,18497
S3	Equal variances assumed	,006	,32457	,11708	,09416
	Equal variances not assumed	,004	,32457	,11032	,10596

Table 102

Others T-Test

Group Statistics

	S1_13_Others	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	6	3,4444	,62952	,25700
	No	296	3,3142	,91894	,05341
factor2	Yes	6	3,1250	1,29180	,52738
	No	296	3,6748	,92908	,05400
factor3	Yes	6	3,2917	,48520	,19808
	No	296	3,5051	,93721	,05447
factor4	Yes	6	3,0833	1,28128	,52308
	No	296	3,2855	1,14111	,06633
factor5	Yes	6	3,6250	1,03380	,42205
	No	296	3,0498	,98841	,05745
factor6	Yes	6	3,4167	,97040	,39616
	No	296	3,8378	,96676	,05619
S3	Yes	6	4,3333	,81650	,33333
	No	296	4,0473	,84640	,04920

Table 104

Others Independent Samples Test 1

Independent Samples Test1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,487	,486	,345	300
	Equal variances not assumed			,496	5,441
factor2	Equal variances assumed	1,229	,268	-1,424	300
	Equal variances not assumed			-1,037	5,105
factor3	Equal variances assumed	2,677	,103	-,556	300

	Equal variances not assumed			-1,039	5,784
	Equal variances assumed	,001	,969	-,429	300

Table 105

Others Independent Samples Test 2

Independent Samples Test 2

factor4					
factor5	Equal variances not assumed			-,383	5,162
	Equal variances assumed	,008	,928	1,410	300
factor6	Equal variances not assumed			1,350	5,187
	Equal variances assumed	,010	,921	-1,056	300
S3	Equal variances not assumed			-1,053	5,203
	Equal variances assumed	,065	,800	,820	300
	Equal variances not assumed			,849	5,220

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,730	,13026	,37726	-,61216
	Equal variances not assumed	,639	,13026	,26249	-,52838
factorr2	Equal variances assumed	,155	-,54983	,38609	-1,30961
	Equal variances not assumed	,346	-,54983	,53013	-1,90416
factor3	Equal variances assumed	,579	-,21340	,38411	-,96929
	Equal variances not assumed	,340	-,21340	,20544	-,72066
factor4	Equal variances assumed	,668	-,20214	,47157	-1,13015
	Equal variances not assumed	,717	-,20214	,52727	-1,54482
factor5	Equal variances assumed	,160	,57517	,40791	-,22755
	Equal variances not assumed	,233	,57517	,42594	-,50798
factor6	Equal variances assumed	,292	-,42117	,39868	-1,20574
	Equal variances not assumed	,339	-,42117	,40013	-1,43777
S3	Equal variances assumed	,413	,28604	,34883	-,40042
	Equal variances not assumed	,433	,28604	,33694	-,56923

Table 106
Learning Management System Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,051	,822	5,347	300
	Equal variances not assumed			5,428	132,499
factor2	Equal variances assumed	4,978	,026	4,725	300
	Equal variances not assumed			5,153	152,187
factor3	Equal variances assumed	,083	,773	3,968	300
	Equal variances not assumed			3,853	122,855
factor4	Equal variances assumed	,014	,905	2,472	300
	Equal variances not assumed			2,432	125,536
factor5	Equal variances assumed	,045	,832	6,589	300
	Equal variances not assumed			6,593	129,186
factor6	Equal variances assumed	,042	,838	2,062	300
	Equal variances not assumed			1,978	120,490
S3	Equal variances assumed	,011	,917	6,713	300

	Equal variances not assumed			7,261	149,654

Table 107
Learning Management System Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,61993	,11594	,39178
	Equal variances not assumed	,000	,61993	,11421	,39402
factor2	Equal variances assumed	,000	,56780	,12018	,33130
	Equal variances not assumed	,000	,56780	,11019	,35010
factor3	Equal variances assumed	,000	,47802	,12046	,24098
	Equal variances not assumed	,000	,47802	,12406	,23246
factor4	Equal variances assumed	,014	,37116	,15016	,07565
	Equal variances not assumed	,016	,37116	,15263	,06909

factor5	Equal variances assumed	,000	,81046	,12300	,56841
	Equal variances not assumed	,000	,81046	,12293	,56725
factor6	Equal variances assumed	,040	,26304	,12754	,01206
	Equal variances not assumed	,050	,26304	,13296	-,00020
S3	Equal variances assumed	,000	,70284	,10471	,49679
	Equal variances not assumed	,000	,70284	,09679	,51159

Table 108

Publishing Data Base T-Test

Group Statistics

	S2_2_Publishing Data Base	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	67	3,7214	,88686	,10835
	No	235	3,2014	,88961	,05803
factor2	Yes	67	4,1567	,72931	,08910
	No	235	3,5234	,94450	,06161
factor3	Yes	67	3,8619	,87828	,10730
	No	235	3,3979	,92085	,06007
factor4	Yes	67	3,5746	1,14566	,13996
	No	235	3,1979	1,12954	,07368
factor5	Yes	67	3,6754	,93442	,11416
	No	235	2,8862	,93688	,06112
factor6	Yes	67	4,0522	,91757	,11210
	No	235	3,7660	,97320	,06348
S3	Yes	67	4,5821	,65480	,08000
	No	235	3,9021	,83397	,05440

Table 109

Publishing Data Base Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,345	,557	4,223	300
	Equal variances not assumed			4,231	106,820
factor2	Equal variances assumed	4,391	,037	5,072	300
	Equal variances not assumed			5,846	135,474
factor3	Equal variances assumed	,545	,461	3,676	300
	Equal variances not assumed			3,774	110,785
factor4	Equal variances assumed	,195	,659	2,401	300
	Equal variances not assumed			2,382	105,369
factor5	Equal variances assumed	,003	,953	6,086	300
	Equal variances not assumed			6,095	106,780
factor6	Equal variances assumed	,552	,458	2,150	300
	Equal variances not assumed			2,222	111,880
S3	Equal variances assumed	,412	,521	6,152	300
	Equal variances not assumed			7,029	133,132

Table 110 Publishing Data Base Independent Samples Test 2

Independent Samples Test 2

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,51997	,12312	,27768
	Equal variances not assumed	,000	,51997	,12291	,27632
factor2	Equal variances assumed	,000	,63331	,12486	,38759
	Equal variances not assumed	,000	,63331	,10833	,41908
factor3	Equal variances assumed	,000	,46407	,12626	,21560
	Equal variances not assumed	,000	,46407	,12297	,22039
factor4	Equal variances assumed	,017	,37675	,15693	,06794
	Equal variances not assumed	,019	,37675	,15817	,06314
factor5	Equal variances assumed	,000	,78920	,12968	,53401
	Equal variances not assumed	,000	,78920	,12949	,53250
factor6	Equal variances assumed	,032	,28628	,13313	,02430
	Equal variances not assumed	,028	,28628	,12883	,03102
S3	Equal variances assumed	,000	,67996	,11052	,46247
	Equal variances not assumed	,000	,67996	,09674	,48861

Table 111 Open Source Data Base T-Test

Group Statistics

	S2_3_Open source database	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	63	3,6455	,78716	,09917
	No	239	3,2301	,92622	,05991
factor2	Yes	63	3,9087	,81974	,10328
	No	239	3,5994	,95778	,06195
factor3	Yes	63	3,8651	,77619	,09779
	No	239	3,4048	,94524	,06114
factor4	Yes	63	3,5397	1,10826	,13963
	No	239	3,2134	1,14334	,07396
factor5	Yes	63	3,6032	,88518	,11152
	No	239	2,9184	,96913	,06269
factor6	Yes	63	4,0079	,88669	,11171
	No	239	3,7824	,98345	,06361
S3	Yes	63	4,4921	,71556	,09015
	No	239	3,9372	,84031	,05436

Table 112

Open Source Data Base Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	1,225	,269	3,262	300
	Equal variances not assumed			3,585	111,640
factor2	Equal variances assumed	4,776	,030	2,346	300
	Equal variances not assumed			2,569	110,908

factor3	Equal variances assumed	3,299	,070	3,560	300
	Equal variances not assumed			3,991	115,357
factor4	Equal variances assumed	,003	,957	2,028	300
	Equal variances not assumed			2,065	99,625
factor5	Equal variances assumed	1,186	,277	5,077	300
	Equal variances not assumed			5,353	104,649
factor6	Equal variances assumed	2,908	,089	1,651	300
	Equal variances not assumed			1,754	105,829
S3	Equal variances assumed	,357	,550	4,800	300
	Equal variances not assumed			5,270	111,434

Table 113

Open Source Data Base Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,001	,41538	,12735	,16476
	Equal variances not assumed	,001	,41538	,11586	,18580

factorr 2	Equal variances assumed	,020	,30936	,13184	,04991
	Equal variances not assumed	,012	,30936	,12043	,07071
factor3	Equal variances assumed	,000	,46027	,12928	,20585
	Equal variances not assumed	,000	,46027	,11533	,23183
factor4	Equal variances assumed	,043	,32629	,16091	,00964
	Equal variances not assumed	,042	,32629	,15800	,01280
factor5	Equal variances assumed	,000	,68476	,13488	,41933
	Equal variances not assumed	,000	,68476	,12793	,43109
factor6	Equal variances assumed	,100	,22551	,13656	-,04323
	Equal variances not assumed	,082	,22551	,12856	-,02937
S3	Equal variances assumed	,000	,55482	,11558	,32738
	Equal variances not assumed	,000	,55482	,10527	,34623

Table 114 Digital Board T-Test

Group Statistics

	S2_4_Digital Board	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	42	3,9603	,71265	,10996
	No	259	3,2098	,90122	,05600
factor2	Yes	42	4,0179	,70795	,10924
	No	259	3,6071	,96064	,05969
factor3	Yes	42	3,9762	,76471	,11800
	No	259	3,4228	,93480	,05809

factor4	Yes	42	3,6310	,91104	,14058
	No	259	3,2181	1,16377	,07231
factor5	Yes	42	3,8869	,77735	,11995
	No	259	2,9257	,95871	,05957
factor6	Yes	42	4,0119	1,02105	,15755
	No	259	3,7992	,95856	,05956
S3	Yes	42	4,4286	,63025	,09725
	No	259	3,9923	,86263	,05360

Table 115
Digital Board Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	2,511	,114	5,140	299
	Equal variances not assumed			6,082	64,335
factor2	Equal variances assumed	6,310	,013	2,655	299
	Equal variances not assumed			3,299	68,173
factor3	Equal variances assumed	3,960	,047	3,642	299
	Equal variances not assumed			4,208	62,693
factor4	Equal variances assumed	6,791	,010	2,191	299
	Equal variances not assumed			2,611	64,847
factor5	Equal variances assumed	2,546	,112	6,174	299
	Equal variances not assumed			7,177	63,110
factor6	Equal variances assumed	,000	,996	1,322	299

	Equal variances not assumed			1,263	53,384
S3	Equal variances assumed	,079	,779	3,143	299
	Equal variances not assumed			3,929	68,687

Table 116
Digital Board Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,75054	,14601	,46320
	Equal variances not assumed	,000	,75054	,12340	,50404
factor2	Equal variances assumed	,008	,41071	,15471	,10626
	Equal variances not assumed	,002	,41071	,12448	,16232
factor3	Equal variances assumed	,000	,55341	,15193	,25442
	Equal variances not assumed	,000	,55341	,13152	,29056
factor4	Equal variances assumed	,029	,41281	,18838	,04209
	Equal variances not assumed	,011	,41281	,15809	,09707
factor5	Equal variances assumed	,000	,96123	,15568	,65485
	Equal variances not assumed	,000	,96123	,13393	,69361

factor6	Equal variances assumed	,187	,21268	,16092	-,10399
	Equal variances not assumed	,212	,21268	,16843	-,12510
S3	Equal variances assumed	,002	,43629	,13883	,16308
	Equal variances not assumed	,000	,43629	,11104	,21475

Table 117
Computer T-Test

Group Statistics

	S2_5_Computer	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	265	3,3000	,90560	,05563
	No	37	3,4369	,97290	,15994
factor2	Yes	265	3,6651	,94089	,05780
	No	37	3,6554	,92862	,15266
factor3	Yes	265	3,4877	,93647	,05753
	No	37	3,5946	,89239	,14671
factor4	Yes	265	3,3509	1,12372	,06903
	No	37	2,7838	1,16393	,19135
factor5	Yes	265	3,0330	,97947	,06017
	No	37	3,2635	1,06057	,17436
factor6	Yes	265	3,8245	,96940	,05955
	No	37	3,8649	,96212	,15817
S3	Yes	265	4,0528	,81478	,05005
	No	37	4,0541	1,05267	,17306

Table 118

Computer Independent Samples Test 1

Independent Samples Test 1

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df

factor1	Equal variances assumed	,682	,409	-,854	300
	Equal variances not assumed			-,809	45,147
factor2	Equal variances assumed	,243	,622	,059	300
	Equal variances not assumed			,059	46,929
factor3	Equal variances assumed	,456	,500	-,654	300
	Equal variances not assumed			-,678	47,768
factor4	Equal variances assumed	,743	,389	2,863	300
	Equal variances not assumed			2,788	45,874
faktör5	Equal variances assumed	1,146	,285	-1,327	300
	Equal variances not assumed			-1,250	44,998
factor6	Equal variances assumed	,020	,888	-,237	300
	Equal variances not assumed			-,239	46,801
S3	Equal variances assumed	5,483	,020	-,008	300
	Equal variances not assumed			-,007	42,234

Table 119

Computer Independent Samples Test 2

Independent Samples Test 2

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,394	-,13694	,16040	-,45258
	Equal variances not assumed	,423	-,13694	,16934	-,47798
factor2	Equal variances assumed	,953	,00969	,16487	-,31476
	Equal variances not assumed	,953	,00969	,16324	-,31872
factor3	Equal variances assumed	,514	-,10686	,16344	-,42850
	Equal variances not assumed	,501	-,10686	,15758	-,42374
factor4	Equal variances assumed	,004	,56716	,19807	,17737
	Equal variances not assumed	,008	,56716	,20342	,15767
factor5	Equal variances assumed	,185	-,23049	,17367	-,57226
	Equal variances not assumed	,218	-,23049	,18445	-,60199
factor6	Equal variances assumed	,813	-,04034	,16998	-,37484
	Equal variances not assumed	,812	-,04034	,16901	-,38038
S3	Equal variances assumed	,993	-,00122	,14863	-,29370
	Equal variances not assumed	,995	-,00122	,18015	-,36472

Table 120
Internet T-Test

Group Statistics

	S2_6_Internet	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	230	3,4558	,85303	,05625
	No	72	2,8727	,96353	,11355
factor2	Yes	230	3,7391	,89570	,05906
	No	72	3,4236	1,03175	,12159
factor3	Yes	230	3,5489	,90790	,05987
	No	72	3,3472	,98987	,11666
factor4	Yes	230	3,3174	1,15658	,07626
	No	72	3,1667	1,09416	,12895
factor5	Yes	230	3,1957	,95521	,06298
	No	72	2,6319	,98668	,11628
factor6	Yes	230	3,8848	,94775	,06249
	No	72	3,6528	1,01273	,11935
S3	Yes	230	4,1870	,75043	,04948
	No	72	3,6250	,98492	,11607

Table 121

Internet Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	3,159	,077	4,904	300
	Equal variances not assumed			4,602	108,097
factor2	Equal variances assumed	3,579	,059	2,513	300

	Equal variances not assumed			2,334	106,614
factor3	Equal variances assumed	,064	,800	1,609	300
	Equal variances not assumed			1,538	110,934
factor4	Equal variances assumed	,550	,459	,977	300
	Equal variances not assumed			1,006	124,628
factor5	Equal variances assumed	,279	,598	4,336	300
	Equal variances not assumed			4,263	115,686
factor6	Equal variances assumed	,822	,365	1,783	300
	Equal variances not assumed			1,722	112,643
S3	Equal variances assumed	10,942	,001	5,124	300
	Equal variances not assumed			4,454	98,145

Table 122

Internet Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,58311	,11890	,34913

	Equal variances not assumed	,000	,58311	,12672	,33193
factor2	Equal variances assumed	,012	,31552	,12555	,06845
	Equal variances not assumed	,021	,31552	,13518	,04753
factor3	Equal variances assumed	,109	,20169	,12531	-,04492
	Equal variances not assumed	,127	,20169	,13112	-,05814
factor4	Equal variances assumed	,329	,15072	,15424	-,15280
	Equal variances not assumed	,316	,15072	,14981	-,14578
factor5	Equal variances assumed	,000	,56371	,13001	,30785
	Equal variances not assumed	,000	,56371	,13224	,30177
factor6	Equal variances assumed	,076	,23200	,13012	-,02406
	Equal variances not assumed	,088	,23200	,13472	-,03491
S3	Equal variances assumed	,000	,56196	,10966	,34615
	Equal variances not assumed	,000	,56196	,12618	,31156

Table 123
Youtube T-Test

Group Statistics

	S2_7_Youtube	N	Mean	Std. Deviation	Std. Error Mean
factorr1	Yes	145	3,6023	,75031	,06231
	No	157	3,0531	,97202	,07758
factor2	Yes	145	3,8362	,79842	,06631
	No	157	3,5048	1,02746	,08200

factor3	Yes	145	3,6948	,80927	,06721
	No	157	3,3217	,99922	,07975
factor4	Yes	145	3,5690	1,05347	,08749
	No	157	3,0159	1,15944	,09253
factor5	Yes	145	3,3586	,92271	,07663
	No	157	2,7866	,97477	,07779
factor6	Yes	145	3,9552	,93340	,07751
	No	157	3,7134	,98580	,07868
S3	Yes	145	4,2138	,72826	,06048
	No	157	3,9045	,91836	,07329

Table 124
Youtube Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	13,436	,000	5,464	300
	Equal variances not assumed			5,520	291,003
factor2	Equal variances assumed	12,277	,001	3,112	300
	Equal variances not assumed			3,143	291,627
factor3	Equal variances assumed	11,332	,001	3,549	300
	Equal variances not assumed			3,578	295,049
factor4	Equal variances assumed	2,132	,145	4,326	300
	Equal variances not assumed			4,343	299,923
factor5	Equal variances assumed	,723	,396	5,227	300

	Equal variances not assumed			5,238	299,814
factor6	Equal variances assumed	,356	,551	2,185	300
	Equal variances not assumed			2,189	299,810
S3	Equal variances assumed	2,661	,104	3,226	300
	Equal variances not assumed			3,255	293,402

Table 125
Youtube Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,54922	,10051	,35143
	Equal variances not assumed	,000	,54922	,09950	,35339
factor2	Equal variances assumed	,002	,33143	,10650	,12185
	Equal variances not assumed	,002	,33143	,10545	,12388
factor3	Equal variances assumed	,000	,37317	,10516	,16623
	Equal variances not assumed	,000	,37317	,10429	,16793
factor4	Equal variances assumed	,000	,55304	,12783	,30149

	Equal variances not assumed	,000	,55304	,12734	,30244
factor5	Equal variances assumed	,000	,57200	,10944	,35664
	Equal variances not assumed	,000	,57200	,10920	,35711
factor6	Equal variances assumed	,030	,24180	,11069	,02398
	Equal variances not assumed	,029	,24180	,11045	,02445
S3	Equal variances assumed	,001	,30933	,09589	,12063
	Equal variances not assumed	,001	,30933	,09502	,12232

Table 126 Wind Bandwidth T-Test

Group Statistics

	S2_8_Wind Bandwidth	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	37	4,0541	,66325	,10904
	No	265	3,2138	,89705	,05511
factor2	Yes	37	4,1892	,66512	,10934
	No	265	3,5906	,94789	,05823
factor3	Yes	37	3,8649	,78306	,12873
	No	265	3,4500	,93925	,05770
factor4	Yes	37	3,6622	,93582	,15385
	No	265	3,2283	1,15951	,07123
factor5	Yes	37	3,9932	,65215	,10721
	No	265	2,9311	,96050	,05900
factor6	Yes	37	4,3514	,84873	,13953
	No	265	3,7566	,96148	,05906
S3	Yes	37	4,6757	,47458	,07802
	No	265	3,9660	,84990	,05221

Table 127

Wind Bandwidth Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	4,169	,042	5,488	300
	Equal variances not assumed			6,877	56,237
factor2	Equal variances assumed	5,769	,017	3,713	300
	Equal variances not assumed			4,832	58,669
factor3	Equal variances assumed	2,038	,154	2,564	300
	Equal variances not assumed			2,941	51,632
factor4	Equal variances assumed	4,357	,038	2,178	300
	Equal variances not assumed			2,559	52,757
factor5	Equal variances assumed	8,280	,004	6,515	300
	Equal variances not assumed			8,679	60,354
factor6	Equal variances assumed	1,959	,163	3,572	300
	Equal variances not assumed			3,925	49,839
S3	Equal variances assumed	2,441	,119	4,967	300
	Equal variances not assumed			7,559	73,451

Table 128

Wind Bandwidth Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,84022	,15309	,53895
	Equal variances not assumed	,000	,84022	,12217	,59550
factor2	Equal variances assumed	,000	,59862	,16121	,28138
	Equal variances not assumed	,000	,59862	,12388	,35071
factor3	Equal variances assumed	,011	,41486	,16180	,09647
	Equal variances not assumed	,005	,41486	,14107	,13173
factor4	Equal variances assumed	,030	,43386	,19919	,04187
	Equal variances not assumed	,013	,43386	,16954	,09378
factor5	Equal variances assumed	,000	1,06211	,16303	,74129
	Equal variances not assumed	,000	1,06211	,12238	,81735

factor6	Equal variances assumed	,000	,59475	,16649	,26711
	Equal variances not assumed	,000	,59475	,15152	,29039
S3	Equal variances assumed	,000	,70964	,14287	,42849
	Equal variances not assumed	,000	,70964	,09388	,52256

Table 129
Technology Labarotories T-Test

Group Statistics

	S2_9_Technology Labaratories	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	39	4,1026	,68250	,10929
	No	263	3,2003	,88637	,05466
factor2	Yes	39	3,9295	,66627	,10669
	No	263	3,6245	,96649	,05960
factor3	Yes	39	3,8141	,86168	,13798
	No	263	3,4544	,93276	,05752
factor4	Yes	39	3,5000	,88852	,14228
	No	263	3,2490	1,17291	,07232
factor5	Yes	39	4,0064	,77902	,12474
	No	263	2,9211	,94187	,05808
factor6	Yes	39	4,1667	,88357	,14148
	No	263	3,7795	,97038	,05984
S3	Yes	39	4,6923	,46757	,07487
	No	263	3,9582	,84830	,05231

Table 130

Technology Labarotories Independent Samples Test 1

Independent Samples Test 1

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df

factor1	Equal variances assumed	2,640	,105	6,092	300
	Equal variances not assumed			7,384	58,852
factor2	Equal variances assumed	8,984	,003	1,903	300
	Equal variances not assumed			2,496	64,504
factor3	Equal variances assumed	,278	,598	2,269	300
	Equal variances not assumed			2,406	52,125
factor4	Equal variances assumed	6,371	,012	1,282	300
	Equal variances not assumed			1,572	59,599
factor5	Equal variances assumed	3,985	,047	6,854	300
	Equal variances not assumed			7,887	55,879
factor6	Equal variances assumed	1,880	,171	2,351	300
	Equal variances not assumed			2,521	52,565
S3	Equal variances assumed	3,037	,082	5,282	300
	Equal variances not assumed			8,038	81,339

Table 131 Technology Labarotories Independent Samples Test 2

Independent Samples Test 2

	t-test for Equality of Means

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,90231	,14812	,61083
	Equal variances not assumed	,000	,90231	,12219	,65779
factor2	Equal variances assumed	,058	,30496	,16023	-,01036
	Equal variances not assumed	,015	,30496	,12220	,06087
factor3	Equal variances assumed	,024	,35973	,15856	,04770
	Equal variances not assumed	,020	,35973	,14949	,05978
faktör4	Equal variances assumed	,201	,25095	,19575	-,13427
	Equal variances not assumed	,121	,25095	,15961	-,06835
factor5	Equal variances assumed	,000	1,08531	,15835	,77369
	Equal variances not assumed	,000	1,08531	,13760	,80965
factor6	Equal variances assumed	,019	,38720	,16470	,06309
	Equal variances not assumed	,015	,38720	,15362	,07902
S3	Equal variances assumed	,000	,73413	,13899	,46061
	Equal variances not assumed	,000	,73413	,09133	,55242

Table 132 Online Library T-Test

Group Statistics

	S2_10_Online Library	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	99	3,6077	,85061	,08549
	No	203	3,1749	,91148	,06397
factor2	Yes	99	3,8485	,98316	,09881
	No	203	3,5739	,90383	,06344
factor3	Yes	99	3,6843	,90392	,09085
	No	203	3,4113	,93218	,06543
factor4	Yes	99	3,4040	1,12185	,11275
	No	203	3,2217	1,14974	,08070
factor5	Yes	99	3,4571	,96497	,09698
	No	203	2,8682	,94702	,06647
factor6	Yes	99	4,1010	,89494	,08994
	No	203	3,6970	,97523	,06845
S3	Yes	99	4,4242	,67144	,06748
	No	203	3,8719	,86365	,06062

Table 133
Laptop T-Test

Group Statistics

	S2_11_Laptop	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	153	3,5795	,88772	,07177
	No	149	3,0470	,86213	,07063
factor2	Yes	153	3,9428	,88597	,07163
	No	149	3,3775	,90542	,07417
factor3	Yes	153	3,6242	,93327	,07545
	No	149	3,3742	,91331	,07482
factor4	Yes	153	3,3529	1,22324	,09889
	No	149	3,2081	1,05122	,08612
factor5	Yes	153	3,2288	1,05870	,08559
	No	149	2,8893	,88693	,07266

factor6	Yes	153	4,1601	,79607	,06436
	No	149	3,4899	1,01087	,08281
S3	Yes	153	4,2810	,83080	,06717
	No	149	3,8188	,79741	,06533

Table 134 Laptop Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,129	,720	5,287	300
	Equal variances not assumed			5,289	299,998
factor2	Equal variances assumed	1,789	,182	5,484	300
	Equal variances not assumed			5,482	299,302
factor3	Equal variances assumed	,233	,630	2,352	300
	Equal variances not assumed			2,353	299,993
factor4	Equal variances assumed	5,972	,015	1,103	300
	Equal variances not assumed			1,105	295,449
factor5	Equal variances assumed	8,199	,004	3,017	300
	Equal variances not assumed			3,024	293,483
factor6	Equal variances assumed	9,048	,003	6,410	300
	Equal variances not assumed			6,390	280,967

S3	Equal variances assumed	4,258	,040	4,931	300
	Equal variances not assumed			4,934	299,937

Table 135

Laptop Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,53254	,10073	,33431
	Equal variances not assumed	,000	,53254	,10069	,33439
factor2	Equal variances assumed	,000	,56529	,10308	,36244
	Equal variances not assumed	,000	,56529	,10311	,36238
factor3	Equal variances assumed	,019	,25002	,10629	,04085
	Equal variances not assumed	,019	,25002	,10626	,04091
factor4	Equal variances assumed	,271	,14489	,13140	-,11369
	Equal variances not assumed	,270	,14489	,13114	-,11319
factor5	Equal variances assumed	,003	,33950	,11253	,11804
	Equal variances not assumed	,003	,33950	,11227	,11853

factor6	Equal variances assumed	,000	,67020	,10456	,46444
	Equal variances not assumed	,000	,67020	,10488	,46374
S3	Equal variances assumed	,000	,46225	,09375	,27777
	Equal variances not assumed	,000	,46225	,09370	,27787

Table 136

Online Library Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	,278	,599	3,958	300
	Equal variances not assumed			4,054	206,996
factor2	Equal variances assumed	,684	,409	2,407	300
	Equal variances not assumed			2,339	180,551
factor3	Equal variances assumed	,007	,933	2,413	300
	Equal variances not assumed			2,439	199,926
factor4	Equal variances assumed	,066	,797	1,304	300
	Equal variances not assumed			1,315	198,804
factor5	Equal variances assumed	,122	,727	5,041	300
	Equal variances not assumed			5,008	191,216

factor6	Equal variances assumed	,768	,381	3,470	300
	Equal variances not assumed			3,574	210,177
S3	Equal variances assumed	,181	,671	5,591	300
	Equal variances not assumed			6,089	243,148

Table 137
Online Library Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,000	,43287	,10935	,21767
	Equal variances not assumed	,000	,43287	,10678	,22236
factor2	Equal variances assumed	,017	,27459	,11406	,05013
	Equal variances not assumed	,020	,27459	,11742	,04290
factor3	Equal variances assumed	,016	,27301	,11315	,05034
	Equal variances not assumed	,016	,27301	,11195	,05225
factor4	Equal variances assumed	,193	,18237	,13983	-,09281
	Equal variances not assumed	,190	,18237	,13865	-,09105
factor5	Equal variances assumed	,000	,58884	,11681	,35897

	Equal variances not assumed	,000	,58884	,11757	,35693
factor6	Equal variances assumed	,001	,40397	,11643	,17485
	Equal variances not assumed	,000	,40397	,11303	,18115
S3	Equal variances assumed	,000	,55232	,09879	,35790
	Equal variances not assumed	,000	,55232	,09071	,37364

Table 138
Tablet T-Test

Group Statistics

	S2_12_Tablet	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	83	3,7209	,78911	,08662
	No	218	3,1628	,91433	,06193
factor2	Yes	83	4,0934	,68042	,07469
	No	218	3,4989	,97299	,06590
factor3	Yes	83	3,8012	,80183	,08801
	No	218	3,3819	,95104	,06441
factor4	Yes	83	3,6807	1,02284	,11227
	No	218	3,1307	1,15308	,07810
factor5	Yes	83	3,4367	1,07483	,11798
	No	218	2,9186	,92237	,06247
factor6	Yes	83	4,2108	,92763	,10182
	No	218	3,6835	,94591	,06407
S3	Yes	83	4,4940	,65096	,07145
	No	218	3,8853	,85365	,05782

Does your universities have tablet questions answers are: Yes answers 83, no answers 218.

Table 139

Tablet Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	2,280	,132	4,907	299
	Equal variances not assumed			5,241	170,427
factor2	Equal variances assumed	15,022	,000	5,109	299
	Equal variances not assumed			5,969	211,045
factor3	Equal variances assumed	2,271	,133	3,563	299
	Equal variances not assumed			3,845	174,454
factor4	Equal variances assumed	4,664	,032	3,811	299
	Equal variances not assumed			4,021	165,877
factor5	Equal variances assumed	4,591	,033	4,156	299
	Equal variances not assumed			3,882	130,552
factor6	Equal variances assumed	,506	,477	4,345	299
	Equal variances not assumed			4,384	150,844
S3	Equal variances assumed	,628	,429	5,876	299
	Equal variances not assumed			6,622	193,231

Table 140

Tablet Independent Samples Test 2

Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
fakctor 1	Equal variances assumed	,000	,55804	,11373	,33423
	Equal variances not assumed	,000	,55804	,10648	,34786
factor2	Equal variances assumed	,000	,59452	,11637	,36551
	Equal variances not assumed	,000	,59452	,09960	,39818
factor3	Equal variances assumed	,000	,41932	,11770	,18770
	Equal variances not assumed	,000	,41932	,10906	,20407
factor4	Equal variances assumed	,000	,54999	,14431	,26600
	Equal variances not assumed	,000	,54999	,13676	,27997
factor5	Equal variances assumed	,000	,51817	,12467	,27283
	Equal variances not assumed	,000	,51817	,13350	,25407
factor6	Equal variances assumed	,000	,52736	,12136	,28853
	Equal variances not assumed	,000	,52736	,12030	,28967

S3	Equal variances assumed	,000	,60865	,10359	,40479
	Equal variances not assumed	,000	,60865	,09191	,42737

Table 141
Progection T-Test

Group Statistics

	S2_13_Progection	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	194	3,3127	,94380	,06776
	No	108	3,3241	,86071	,08282
factor2	Yes	194	3,6894	,95995	,06892
	No	108	3,6181	,89941	,08655
factor3	Yes	194	3,4601	,95257	,06839
	No	108	3,5741	,88883	,08553
factor4	Yes	194	3,2113	1,18679	,08521
	No	108	3,4074	1,05047	,10108
factor5	Yes	194	3,0219	1,02455	,07356
	No	108	3,1319	,92755	,08925
factor6	Yes	194	3,8918	,93777	,06733
	No	108	3,7176	1,01225	,09740
S3	Yes	194	4,0670	,84599	,06074
	No	108	4,0278	,84785	,08158

Table 142

Progection Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	1,620	,204	-,103	300
	Equal variances not assumed			-,106	238,855

factor2	Equal variances assumed	,036	,851	,633	300
	Equal variances not assumed			,645	233,648
factor3	Equal variances assumed	,026	,871	-1,021	300
	Equal variances not assumed			-1,041	234,441
factor4	Equal variances assumed	3,760	,053	-1,432	300
	Equal variances not assumed			-1,483	244,612
factor5	Equal variances assumed	3,122	,078	-,925	300
	Equal variances not assumed			-,951	240,266
factor6	Equal variances assumed	2,258	,134	1,503	300
	Equal variances not assumed			1,471	207,423
S3	Equal variances assumed	2,199	,139	,386	300
	Equal variances not assumed			,386	220,865

Table 143

Progection Independent Samples Test 2

Independent Samples Test 2

	t-test for Equality of Means			
	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
				Lower

factor1	Equal variances assumed	,918	-,01136	,10986	-,22755
	Equal variances not assumed	,916	-,01136	,10701	-,22216
factor2	Equal variances assumed	,527	,07138	,11271	-,15043
	Equal variances not assumed	,519	,07138	,11064	-,14659
factor3	Equal variances assumed	,308	-,11402	,11169	-,33383
	Equal variances not assumed	,299	-,11402	,10951	-,32977
factor4	Equal variances assumed	,153	-,19607	,13687	-,46542
	Equal variances not assumed	,139	-,19607	,13220	-,45647
factor5	Equal variances assumed	,356	-,11004	,11898	-,34418
	Equal variances not assumed	,342	-,11004	,11566	-,33787
factor6	Equal variances assumed	,134	,17416	,11586	-,05383
	Equal variances not assumed	,143	,17416	,11841	-,05928
S3	Equal variances assumed	,700	,03923	,10165	-,16080
	Equal variances not assumed	,700	,03923	,10171	-,16122

Table 144 Other T-Test

Group Statistics

	S2_14_Other	N	Mean	Std. Deviation	Std. Error Mean
factor1	Yes	4	4,3750	,41667	,20833
	No	297	3,2985	,90922	,05276
factor2	Yes	4	4,5000	,70711	,35355
	No	297	3,6524	,93797	,05443

factor3	Yes	4	4,7500	,35355	,17678
	No	297	3,4840	,92609	,05374
factor4	Yes	4	3,6250	,75000	,37500
	No	297	3,2727	1,14625	,06651
factor5	Yes	4	4,4375	,42696	,21348
	No	297	3,0387	,98263	,05702
factor6	Yes	4	4,2500	,86603	,43301
	No	297	3,8215	,96919	,05624
S3	Yes	4	5,0000	,00000	,00000
	No	297	4,0370	,84348	,04894

Does your universities have progection questions answers are: yes answers 4, no answers 297.

Table 145

Other Independent Samples Test 1

Independent Samples Test 1

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
factor1	Equal variances assumed	2,209	,138	2,361	299
	Equal variances not assumed			5,009	3,397
factor2	Equal variances assumed	,850	,357	1,799	299
	Equal variances not assumed			2,370	3,144
factor3	Equal variances assumed	3,122	,078	2,728	299
	Equal variances not assumed			6,852	3,580
factor4	Equal variances assumed	1,592	,208	,612	299
	Equal variances not assumed			,925	3,192

factor5	Equal variances assumed	3,105	,079	2,840	299
	Equal variances not assumed			6,330	3,443
factor6	Equal variances assumed	,011	,917	,879	299
	Equal variances not assumed			,981	3,102
S3	Equal variances assumed	4,004	,046	2,280	299
	Equal variances not assumed			19,675	296,000

Table 146

Other Independent Samples Test 2

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
factor1	Equal variances assumed	,019	1,07646	,45584	,17939
	Equal variances not assumed	,011	1,07646	,21491	,43559
factor2	Equal variances assumed	,073	,84764	,47111	-,07947
	Equal variances not assumed	,095	,84764	,35772	-,26187

factor3	Equal variances assumed	,007	1,26599	,46415	,35258
	Equal variances not assumed	,004	1,26599	,18476	,72836
factor4	Equal variances assumed	,541	,35227	,57531	-,77990
	Equal variances not assumed	,419	,35227	,38085	-,81961
factor5	Equal variances assumed	,005	1,39878	,49259	,42939
	Equal variances not assumed	,005	1,39878	,22096	,74411
factor6	Equal variances assumed	,380	,42845	,48735	-,53063
	Equal variances not assumed	,397	,42845	,43665	-,93565
S3	Equal variances assumed	,023	,96296	,42244	,13164
	Equal variances not assumed	,000	,96296	,04894	,86664